



SEQUENCE LISTING

<110> ASAHI KASEI KABUSHIKI KAISHA
Akio MATSUDA
Goichi HONDA
Shuji MURAMATSU
Yukiko NAGANO

<120> NF-K B Activating Gene

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<151> 2001-08-24

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Arg Ala Ala Thr Pro Phe Ser Asp Ser Trp Tyr Tyr Pro Ser Tyr Pro
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Tyr Asp Arg Tyr Thr Thr Ser Arg Arg Leu Asp Pro Ile Pro Gln Leu	50	55	60
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Ile Gln Cys Gln Asn Lys Gly Trp Asp Gly Tyr Asp Val Gln Trp Glu	85	90	95
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Lys Leu Lys Glu Ser Gly Lys Gln His Gly Phe Ala Ser Phe Ser Asp	145	150	155
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Glu Asn Ser Gly Pro Gly Phe Trp Thr Gly Leu Gly Thr Gly Gly Ile	260	265	270
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Trp Tyr Tyr Pro Ser Tyr Pro Pro Ser Tyr Pro Gly Thr Trp Asn Arg	
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Ala Tyr Ser Pro Leu His Gly Gly Ser Gly Ser Tyr Ser Val Cys Ser	
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Asn Ser Asp Thr Lys Thr Arg Thr Ala Ser Gly Tyr Gly Gly Thr Arg	
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Ala Arg Lys Asn His His Lys Thr Lys Trp Phe Val Pro Trp Gly Pro
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aat cat tgt gac aag atc cga gac att gaa gag gca att cca agg gaa 476
Asn His Cys Asp Lys Ile Arg Asp Ile Glu Glu Ala Ile Pro Arg Glu
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 Lys Cys Val Asp Ala Arg Lys Asn His His Lys Thr Lys Trp Phe Val
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 Pro Trp Gly Pro Asn His Cys Asp Lys Ile Arg Asp Ile Glu Glu Ala
 65 70 75 80
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 85 90 95
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 Tyr Glu Cys Asp Val Leu Pro Tyr Ala Gln His Leu His His Tyr Gly
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 Val Val Leu Glu Glu Asp His His Asp Val Pro Thr Pro Ser Ala Ser
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1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

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Leu Leu Val Phe Gln Ile Ile Ala Phe Leu Val Gly Gly Leu Ile Ala
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Pro Gly Pro Thr Ala Val Ser Tyr Met Ser Val Lys Cys Val Asp
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Asn His Cys Asp Lys Ile Arg Asp Ile Glu Glu Ala Ile Pro Arg Glu
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Thr Glu Met Ala His Glu Arg Val Pro Arg Lys Leu Lys Cys Thr Phe
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Val Phe His Arg Val
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tgcaccctag aacaaactgg ccatttgcta gtttactcta aagactaaac atagtcttgg 1409
tgtgtgtggt cttactcatc ttctagtacc ttttaaggaca aatcctaagg acttggacac 1469
ttgcaataaaa gaaattttat tttaaaccc 1498

<210> 11
<211> 221
<212> PRT
<213> Homo sapiens

<400> 11
Met Ala Leu Ala Leu Ala Ala Leu Ala Ala Val Glu Pro Ala Cys Gly
1 5 10 15
Ser Arg Tyr Gln Gln Leu Gln Asn Glu Glu Glu Ser Gly Glu Pro Glu
20 25 30
Gln Ala Ala Gly Asp Ala Pro Pro Pro Tyr Ser Ser Ile Ser Ala Glu
35 40 45
Ser Ala Ala Tyr Phe Asp Tyr Lys Asp Glu Ser Gly Phe Pro Lys Pro
50 55 60
Pro Ser Tyr Asn Val Ala Thr Thr Leu Pro Ser Tyr Asp Glu Ala Glu
65 70 75 80

aag gat gag tct ggg ttt cca aag ccc cca tct tac aat gta gct aca 365
Lys Asp Glu Ser Gly Phe Pro Lys Pro Ser Tyr Asn Val Ala Thr
60 65 70

aca ctg ccc agt tat gat gaa gcg gag agg acc aag gct gaa gct act 413
Thr Leu Pro Ser Tyr Asp Glu Ala Glu Arg Thr Lys Ala Glu Ala Thr
75 80 85

atc cct ttg gtt cct ggg aga gat gag gat ttt gtg ggt cgg gat gat 461
Ile Pro Leu Val Pro Gly Arg Asp Glu Asp Phe Val Gly Arg Asp Asp
90 95 100

ttt gat gat gct gac cag ctg agg ata gga aat gat ggg att ttc atg 509
Phe Asp Asp Ala Asp Gln Leu Arg Ile Gly Asn Asp Gly Ile Phe Met
105 110 115

tta act ttt ttc atg gca ttc ctc ttt aac tgg att ggg ttt ttc ctg 557
Leu Thr Phe Phe Met Ala Phe Leu Phe Asn Trp Ile Gly Phe Phe Leu
120 125 130 135

tct ttt tgc ctg acc act tca gct gca gga agg tat ggg gcc att tca 605
Ser Phe Cys Leu Thr Thr Ser Ala Ala Gly Arg Tyr Gly Ala Ile Ser
140 145 150

gga ttt ggt ctc tct cta att aaa tgg atc ctg att gtc agg ttt tcc 653
Gly Phe Gly Leu Ser Leu Ile Lys Trp Ile Leu Ile Val Arg Phe Ser
155 160 165

acc tat ttc cct gga tat ttt gat ggt cag tac tgg ctc tgg tgg gtg 701
Thr Tyr Phe Pro Gly Tyr Phe Asp Gly Gln Tyr Trp Leu Trp Trp Val
170 175 180

ttc ctt gtt tta ggc ttt ctc ctg ttt ctc aga gga ttt atc aat tat 749
Phe Leu Val Leu Gly Phe Leu Leu Phe Leu Arg Gly Phe Ile Asn Tyr
185 190 195

gca aaa gtt cgg aag atg cca gaa act ttc tca aat ctc ccc agg acc 797
Ala Lys Val Arg Lys Met Pro Glu Thr Phe Ser Asn Leu Pro Arg Thr
200 205 210 215

aga gtt ctc ttt att tat taaagatggtt ttctggcaaa ggccttcctg 845
Arg Val Leu Phe Ile Tyr
220

catttatgaa ttctctctca agaagcaaga gaacacctgc aggaagtgaa tcaagatgca 905

gaacacagag gaataatcac ctgctttaaa aaaataaagt actgttgaaa agatcatttc 965

tctctatttg ttcttaggtg taaaatttta atagttaatg cagaattctg taatcattga 1025

atcattagtg gttaatgttt gaaaaagctc ttgcaatcaa gtctgtgatg tattaataat 1085

gccttatata ttgtttgtag tcattttaag tagcatgagc catgtccctg tagtcggtag 1145

ggggcagtct tgctttatcc atcctccatc tcaaaatgaa cttggaatta aatattgtaa 1205

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 agaaaccagt ggggttataat gtagaatgat gtgctttctg cccaagtgg aattcatctt 1805
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<210> 13
 <211> 242
 <212> PRT
 <213> Homo sapiens

<400> 13
 Met Asp His His Gln Pro Gly Thr Gly Arg Tyr Gln Val Leu Leu Asn
 1 5 10 15
 Glu Glu Asp Asn Ser Glu Ser Ser Ala Ile Glu Gln Pro Pro Thr Ser
 20 25 30
 Asn Pro Ala Pro Gln Ile Val Gln Ala Ala Ser Ser Ala Pro Ala Leu
 35 40 45
 Glu Thr Asp Ser Ser Pro Pro Pro Tyr Ser Ser Ile Thr Val Glu Val
 50 55 60
 Pro Thr Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr Pro Val Pro
 65 70 75 80
 Pro Pro Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp Glu Ala Glu
 85 90 95
 Lys Ala Lys Ala Ala Ala Met Ala Ala Ala Ala Ala Glu Thr Ser Gln
 100 105 110
 Arg Ile Gln Glu Glu Glu Cys Pro Pro Arg Asp Asp Phe Ser Asp Ala
 115 120 125
 Asp Gln Leu Arg Val Gly Asn Asp Gly Ile Phe Met Leu Ala Phe Phe
 130 135 140
 Met Ala Phe Ile Phe Asn Trp Leu Gly Phe Cys Leu Ser Phe Cys Ile

SECRET

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<210> 14
<211> 2324
<212> DNA
<213> Homo sapiens
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<220>  
<221> CDS  
<222> (13) .. (738)
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Met Asp His His Gln Pro Gly Thr Gly Arg Tyr Gln Val
1 5 10

ctt ctt aat gaa gag gat aac tca gaa tca tcg gct ata gag cag cca 99
Leu Leu Asn Glu Glu Asp Asn Ser Glu Ser Ser Ala Ile Glu Gln Pro
15 20 25

cct act tca aac cca gca ccg cag att gtg cag gct gcg tct tca gca 147
Pro Thr Ser Asn Pro Ala Pro Gln Ile Val Gln Ala Ala Ser Ser Ala
30 35 40 45

cca gca ctt gaa act gac tct tcc cct cca cca tat agt agt att act 195
Pro Ala Leu Glu Thr Asp Ser Ser Pro Pro Pro Tyr Ser Ser Ile Thr
50 55 60

gtg gaa gta cct aca act tca gat aca gaa gtt tac ggt gag ttt tat 243
Val Glu Val Pro Thr Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr
65 70 75

ccc gtg cca cct ccc tat agc gtt gct acc tct ctt cct aca tac gat 291
Pro Val Pro Pro Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp
80 85 90

gaa gct gag aag gct aaa gct gct gca atg gca gct gca gca gca gaa 339
Glu Ala Glu Lys Ala Lys Ala Ala Ala Met Ala Ala Ala Ala Ala Glu

95	100	105	
aca tct caa aga att cag gag gaa gag tgt cca cca aga gat gac ttc			387
Thr Ser Gln Arg Ile Gln Glu Glu Glu Cys Pro Pro Arg Asp Asp Phe			
110	115	120	125
agt gat gca gac cag ctc aga gtg ggg aat gat ggc att ttc atg ctg			435
Ser Asp Ala Asp Gln Leu Arg Val Gly Asn Asp Gly Ile Phe Met Leu			
	130	135	140
gca ttt ttc atg gca ttt att ttc aac tgg ctt gga ttt tgt tta tcc			483
Ala Phe Phe Met Ala Phe Ile Phe Asn Trp Leu Gly Phe Cys Leu Ser			
	145	150	155
ttc tgt atc acc aat acc ata gct gga agg tat ggt gct atc tgc gga			531
Phe Cys Ile Thr Asn Thr Ile Ala Gly Arg Tyr Gly Ala Ile Cys Gly			
	160	165	170
ttt ggc ctt tcc ttg atc aaa tgg atc ctt att gtc agg ttt tct gat			579
Phe Gly Leu Ser Leu Ile Lys Trp Ile Leu Ile Val Arg Phe Ser Asp			
	175	180	185
tat ttt act gga tat ttc aat gga cag tat tgg ctt tgg tgg ata ttt			627
Tyr Phe Thr Gly Tyr Phe Asn Gly Gln Tyr Trp Leu Trp Trp Ile Phe			
190	195	200	205
ctt gta ctt ggc ctg ctc ctt ttc ttc aga gga ttt gtt aat tat cta			675
Leu Val Leu Gly Leu Leu Leu Phe Phe Arg Gly Phe Val Asn Tyr Leu			
	210	215	220
aaa gtc aga aac atg tct gaa agt atg gca gct gct cat aga aca agg			723
Lys Val Arg Asn Met Ser Glu Ser Met Ala Ala Ala His Arg Thr Arg			
	225	230	235
tat ttc ttc tta ttg tagagactgc atcaaccgga cattcctttc ttataccaat			778
Tyr Phe Phe Leu Leu			
	240		
gtgaaatttc cagatcatct gtaaacctac aactttaata gaagactact aataacagaa			838
gacaaattag tgaagaaaag acggagtttc gaaattgaat ggcaggggtgg tttttgctta			898
caagccattt ctgttcattc tttaagtatc tatatttcat ttgttttgca catatgcata			958
tgtgcccatt taagatattt gcatatactt gatagaaacc ataaagttgt agcagttaag			1018
tccagtcaca tttggttaat cagtgtttga tataattgaa agagttgagt ggataaacag			1078
tcttccagct tgtaaatgcc attgacttct gacctgacat ttagtataat aaaaatgaaa			1138
ttcttaacca tgtcaaatga tttagtttct ggctcttaga ctcatctggc agttctacac			1198
atgaaacatc ttttggtata taggggtgtat tgaaacctgc agtgctgatt attagaaagg			1258
atttgtcaga tttttgaaca tgatatttac attattattt aggaaaactc ttctgtgaaa			1318
taaccatgca taacttaactt tctgcaatgt tttcttagaa attgtgtcca gatagctttc			1378

actaatttta	aattaagtga	actaaatata	tatgtgtata	tgtatacaca	tatatataca	1438
cacacacata	tatatattta	gaaacgtgag	tgttaaagat	agaatttgtt	ttaggacaaa	1498
ttttaagaaa	atgtgggaat	accaaagtgc	ctttataaga	aaaataaatt	ttatttttaag	1558
ggacatacta	gttttaggga	ttttcagatg	ggaagctgca	tttttaggat	tgcccatctt	1618
aagagatctt	gcaggaagag	attgtattag	atattatatt	tatttcattt	aagataattt	1678
tcaaagttaa	ttttctaaat	aagataattc	tcatttgtgt	ttgtctttta	aaaggccaat	1738
aaaatatctt	tcagtatcat	tgtaataatt	ttttagagtt	taatttgtaa	agcttagcaa	1798
ataaaatctt	gtactatgaa	tagcttcttg	ctttatgact	ttaggattaa	cttgtaaaaa	1858
acatatcctg	aactgagata	tgcaaaatac	tcattttcaa	gttatggaaa	tgtgtttgtg	1918
gcatatagga	ctgtggggtc	tgtgtgtgta	gtgagagtgt	gtagccacta	ttataactgg	1978
aatttaattt	acattcataa	actactatat	ttcccatctt	gcaaattcatt	ttatgtctca	2038
tctgtttttc	ctttcggtta	tatctttggt	tttgaatacc	aacatttaaa	atgatgggat	2098
tttatctttt	aaacttaaaa	attatttaat	acagctatat	ggaccttata	aaattgattt	2158
cttattttatt	attagacatt	actactaaaa	ggtacatcta	actattcagg	gacatttttc	2218
catttccaaa	aaataaaatt	tattatgctt	tataacctct	tctgtatttt	ctaatttttt	2278
cattgtcttt	gataaataaa	acagttttgt	tttgctaata	tagcct		2324

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<210> 15
<211> 242
<212> PRT
<213> Homo sapiens
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Glu Glu Asp Asn Ser Glu Ser Ser Ala Ile Glu Gln Pro Pro Thr Ser
      20              25              30
Asn Pro Ala Pro Gln Ile Val Gln Ala Val Ser Ser Ala Pro Ala Leu
      35              40              45
Glu Thr Asp Ser Ser Pro Pro Pro Tyr Ser Ser Ile Thr Val Glu Val
  50              55              60
Pro Thr Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr Pro Val Pro
  65              70              75              80
Pro Pro Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp Glu Ala Glu
      85              90              95

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Lys Ala Lys Ala Ala Ala Met Ala Ala Ala Ala Ala Glu Thr Ser Gln
 100 105 110

Arg Ile Gln Glu Glu Glu Cys Pro Pro Arg Asp Asp Phe Ser Asp Ala
 115 120 125

Asp Gln Leu Arg Val Gly Asn Asp Gly Ile Phe Met Leu Ala Phe Phe
 130 135 140

Met Ala Phe Ile Phe Asn Trp Leu Gly Phe Cys Leu Ser Phe Cys Ile
 145 150 155 160

Thr Asn Thr Ile Ala Gly Arg Tyr Gly Ala Ile Cys Gly Phe Gly Leu
 165 170 175

Ser Leu Ile Lys Trp Ile Leu Ile Val Arg Phe Ser Asp Tyr Phe Thr
 180 185 190

Gly Tyr Phe Asn Gly Gln Tyr Trp Leu Trp Trp Ile Phe Leu Val Leu
 195 200 205

Gly Leu Leu Leu Phe Phe Arg Gly Phe Val Asn Tyr Leu Lys Val Arg
 210 215 220

Asn Met Ser Glu Ser Met Ala Ala Ala His Arg Thr Arg Tyr Phe Phe
 225 230 235 240

Leu Leu

<210> 16
 <211> 2324
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (13)..(738)

<400> 16
 gagccgggca gg atg gat cac cac cag ccg ggg act ggg cgc tac cag gtg 51

Met Asp His His Gln Pro Gly Thr Gly Arg Tyr Gln Val
 1 5 10

ctt ctt aat gaa gag gat aac tca gaa tca tcg gct ata gag cag cca 99
 Leu Leu Asn Glu Glu Asp Asn Ser Glu Ser Ser Ala Ile Glu Gln Pro
 15 20 25

cct act tca aac cca gca ccg cag att gtg cag gct gtg tct tca gca 147
 Pro Thr Ser Asn Pro Ala Pro Gln Ile Val Gln Ala Val Ser Ser Ala
 30 35 40 45

cca gca ctt gaa act gac tct tcc cct cca cca tat agt agt att act 195
 Pro Ala Leu Glu Thr Asp Ser Ser Pro Pro Pro Tyr Ser Ser Ile Thr
 50 55 60

gtg gaa gta cct aca act tca gat aca gaa gtt tac ggt gag ttt tat 243
Val Glu Val Pro Thr Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr
65 70 75

ccc gtg cca cct ccc tat agc gtt gct acc tct ctt cct aca tac gat 291
Pro Val Pro Pro Pro Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp
80 85 90

gaa gct gag aag gct aaa gct gct gca atg gca gct gca gca gca gaa 339
Glu Ala Glu Lys Ala Lys Ala Ala Ala Met Ala Ala Ala Ala Ala Glu
95 100 105

aca tct caa aga att cag gag gaa gag tgt cca cca aga gat gac ttc 387
Thr Ser Gln Arg Ile Gln Glu Glu Glu Cys Pro Pro Arg Asp Asp Phe
110 115 120 125

agt gat gca gac cag ctc aga gtg ggg aat gat ggc att ttc atg ctg 435
Ser Asp Ala Asp Gln Leu Arg Val Gly Asn Asp Gly Ile Phe Met Leu
130 135 140

gca ttt ttc atg gca ttt att ttc aac tgg ctt gga ttt tgt tta tcc 483
Ala Phe Phe Met Ala Phe Ile Phe Asn Trp Leu Gly Phe Cys Leu Ser
145 150 155

ttc tgt atc acc aat acc ata gct gga agg tat ggt gct atc tgc gga 531
Phe Cys Ile Thr Asn Thr Ile Ala Gly Arg Tyr Gly Ala Ile Cys Gly
160 165 170

ttt ggc ctt tcc ttg atc aaa tgg atc ctt att gtc agg ttt tct gat 579
Phe Gly Leu Ser Leu Ile Lys Trp Ile Leu Ile Val Arg Phe Ser Asp
175 180 185

tat ttt act gga tat ttc aat gga cag tat tgg ctt tgg tgg ata ttt 627
Tyr Phe Thr Gly Tyr Phe Asn Gly Gln Tyr Trp Leu Trp Trp Ile Phe
190 195 200 205

ctt gta ctt ggc ctg ctc ctt ttc ttc aga gga ttt gtt aat tat cta 675
Leu Val Leu Gly Leu Leu Leu Phe Phe Arg Gly Phe Val Asn Tyr Leu
210 215 220

aaa gtc aga aac atg tct gaa agt atg gca gct gct cat aga aca agg 723
Lys Val Arg Asn Met Ser Glu Ser Met Ala Ala Ala His Arg Thr Arg
225 230 235

tat ttc ttc tta ttg tagagactgc atcaaccoga cattcctttc ttataccaat 778
Tyr Phe Phe Leu Leu
240

gtgaaatttc cagatcatct gtaaacctac aactttaata gaagactact aataacagaa 838

gacaaattag tgaagaaaag acggagtttc gaaattgaat ggcagggtgg tttttgctta 898

caagccattt ctgttcattc ttttaagtatc tatatttcat ttgttttgca catatgcata 958

tgtgcccatt taagatatatt gcataactt gatagaaacc ataaagttgt agcagtttaag 1018

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<210> 17
<211> 336
<212> PRT
<213> Homo sapiens
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<400> 17
Met Ala Arg Arg Arg Ser Gln Arg Val Cys Ala Ser Gly Pro Ser Met
1 5 10 15
Leu Asn Ser Ala Arg Gly Ala Pro Glu Leu Leu Arg Gly Thr Ala Thr
20 25 30

Asn	Ala	Glu	Val	Ser	Ala	Ala	Ala	Gly	Ala	Thr	Gly	Ser	Glu	Glu	
	35						40					45			
Leu	Pro	Pro	Gly	Asp	Arg	Gly	Cys	Arg	Asn	Gly	Gly	Gly	Arg	Gly	Pro
	50					55					60				
Ala	Ala	Thr	Thr	Ser	Ser	Thr	Gly	Val	Ala	Val	Gly	Ala	Glu	His	Gly
	65				70					75					80
Glu	Asp	Ser	Leu	Ser	Arg	Lys	Pro	Asp	Pro	Glu	Pro	Gly	Arg	Met	Asp
				85					90					95	
His	His	Gln	Pro	Gly	Thr	Gly	Arg	Tyr	Gln	Val	Leu	Leu	Asn	Glu	Glu
			100					105					110		
Asp	Asn	Ser	Glu	Ser	Ser	Ala	Ile	Glu	Gln	Pro	Pro	Thr	Ser	Asn	Pro
		115					120					125			
Ala	Pro	Gln	Ile	Val	Gln	Ala	Val	Ser	Ser	Ala	Pro	Ala	Leu	Glu	Thr
	130					135					140				
Asp	Ser	Ser	Pro	Pro	Pro	Tyr	Ser	Ser	Ile	Thr	Val	Glu	Val	Pro	Thr
	145				150					155					160
Thr	Ser	Asp	Thr	Glu	Val	Tyr	Gly	Glu	Phe	Tyr	Pro	Val	Pro	Pro	Pro
				165					170					175	
Tyr	Ser	Val	Ala	Thr	Ser	Leu	Pro	Thr	Tyr	Asp	Glu	Ala	Glu	Lys	Ala
			180					185					190		
Lys	Ala	Ala	Ala	Met	Ala	Ala	Ala	Ala	Ala	Glu	Thr	Ser	Gln	Arg	Ile
		195					200					205			
Gln	Glu	Glu	Glu	Cys	Pro	Pro	Arg	Asp	Asp	Phe	Ser	Asp	Ala	Asp	Gln
	210					215					220				
Leu	Arg	Val	Gly	Asn	Asp	Gly	Ile	Phe	Met	Leu	Ala	Phe	Phe	Met	Ala
	225				230					235					240
Phe	Ile	Phe	Asn	Trp	Leu	Gly	Phe	Cys	Leu	Ser	Phe	Cys	Ile	Thr	Asn
				245					250					255	
Thr	Ile	Ala	Gly	Arg	Tyr	Gly	Ala	Ile	Cys	Gly	Phe	Gly	Leu	Ser	Leu
			260					265					270		
Ile	Lys	Trp	Ile	Leu	Ile	Val	Arg	Phe	Ser	Asp	Tyr	Phe	Thr	Gly	Tyr
		275					280					285			
Phe	Asn	Gly	Gln	Tyr	Trp	Leu	Trp	Trp	Ile	Phe	Leu	Val	Leu	Gly	Leu
	290					295					300				
Leu	Leu	Phe	Phe	Arg	Gly	Phe	Val	Asn	Tyr	Leu	Lys	Val	Arg	Asn	Met
	305				310					315					320
Ser	Glu	Ser	Met	Ala	Ala	Ala	His	Arg	Thr	Arg	Tyr	Phe	Phe	Leu	Leu
				325					330					335	

<210> 18
 <211> 2636
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (53)..(1060)

<400> 18
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 Met Ala
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cgc cgg cgg agc cag cga gtc tgc gcg agc ggt ccg agc atg ctc aat 106
 Arg Arg Arg Ser Gln Arg Val Cys Ala Ser Gly Pro Ser Met Leu Asn
 5 10 15

agc gcg cgc ggc gcc ccg gag ctt ctc cgc gga acc gcg acc aac gcg 154
 Ser Ala Arg Gly Ala Pro Glu Leu Leu Arg Gly Thr Ala Thr Asn Ala
 20 25 30

gag gtc tcg gcg gcc gct gcg gga gcc aca gga agt gaa gag ctt ccg 202
 Glu Val Ser Ala Ala Ala Gly Ala Thr Gly Ser Glu Glu Leu Pro
 35 40 45 50

ccg gga gac cgc ggc tgc agg aac gga ggc gga agg ggc cct gcg gcg 250
 Pro Gly Asp Arg Gly Cys Arg Asn Gly Gly Gly Arg Gly Pro Ala Ala
 55 60 65

acg acg tcg tcg acg ggg gtg gcc gtg gga gct gag cac gga gaa gac 298
 Thr Thr Ser Ser Thr Gly Val Ala Val Gly Ala Glu His Gly Glu Asp
 70 75 80

tcc ctc tct cgg aag ccg gat ccc gag ccg ggc agg atg gat cac cac 346
 Ser Leu Ser Arg Lys Pro Asp Pro Glu Pro Gly Arg Met Asp His His
 85 90 95

cag ccg ggg act ggg cgc tac cag gtg ctt ctt aat gaa gag gat aac 394
 Gln Pro Gly Thr Gly Arg Tyr Gln Val Leu Leu Asn Glu Glu Asp Asn
 100 105 110

tca gaa tca tcg gct ata gag cag cca cct act tca aac cca gca ccg 442
 Ser Glu Ser Ser Ala Ile Glu Gln Pro Pro Thr Ser Asn Pro Ala Pro
 115 120 125 130

cag att gtg cag gct gtg tct tca gca cca gca ctt gaa act gac tct 490
 Gln Ile Val Gln Ala Val Ser Ser Ala Pro Ala Leu Glu Thr Asp Ser
 135 140 145

tcc cct cca cca tat agt agt att act gtg gaa gta cct aca act tca 538
 Ser Pro Pro Pro Tyr Ser Ser Ile Thr Val Glu Val Pro Thr Thr Ser
 150 155 160

gat aca gaa gtt tac ggt gag ttt tat ccc gtg cca cct ccc tat agc 586
 Asp Thr Glu Val Tyr Gly Glu Phe Tyr Pro Val Pro Pro Pro Tyr Ser

165	170	175	
ggt gct acc tct ctt cct aca tac gat gaa gct gag aag gct aaa gct 634			
Val Ala Thr Ser Leu Pro Thr Tyr Asp Glu Ala Glu Lys Ala Lys Ala			
180	185	190	
gct gca atg gca gct gca gca gca gaa aca tct caa aga att cag gag 682			
Ala Ala Met Ala Ala Ala Ala Ala Glu Thr Ser Gln Arg Ile Gln Glu			
195	200	205	210
gaa gag tgt cca cca aga gat gac ttc agt gat gca gac cag ctc aga 730			
Glu Glu Cys Pro Pro Arg Asp Asp Phe Ser Asp Ala Asp Gln Leu Arg			
	215	220	225
gtg ggg aat gat ggc att ttc atg ctg gca ttt ttc atg gca ttt att 778			
Val Gly Asn Asp Gly Ile Phe Met Leu Ala Phe Phe Met Ala Phe Ile			
	230	235	240
ttc aac tgg ctt gga ttt tgt tta tcc ttc tgt atc acc aat acc ata 826			
Phe Asn Trp Leu Gly Phe Cys Leu Ser Phe Cys Ile Thr Asn Thr Ile			
	245	250	255
gct gga agg tat ggt gct atc tgc gga ttt ggc ctt tcc ttg atc aaa 874			
Ala Gly Arg Tyr Gly Ala Ile Cys Gly Phe Gly Leu Ser Leu Ile Lys			
	260	265	270
tgg atc ctt att gtc agg ttt tct gat tat ttt act gga tat ttc aat 922			
Trp Ile Leu Ile Val Arg Phe Ser Asp Tyr Phe Thr Gly Tyr Phe Asn			
275	280	285	290
gga cag tat tgg ctt tgg tgg ata ttt ctt gta ctt ggc ctg ctc ctt 970			
Gly Gln Tyr Trp Leu Trp Trp Ile Phe Leu Val Leu Gly Leu Leu Leu			
	295	300	305
ttc ttc aga gga ttt gtt aat tat cta aaa gtc aga aac atg tct gaa 1018			
Phe Phe Arg Gly Phe Val Asn Tyr Leu Lys Val Arg Asn Met Ser Glu			
	310	315	320
agt atg gca gct gct cat aga aca agg tat ttc ttc tta ttg 1060			
Ser Met Ala Ala Ala His Arg Thr Arg Tyr Phe Phe Leu Leu			
	325	330	335
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gtaaacctac aactttaata gaagactact aataacagaa gacaaattag tgaagaaaag 1180			
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 <213> Homo sapiens

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 Asn Ala Glu Val Ser Ala Ala Ala Ala Gly Ala Thr Gly Ser Glu Glu
 35 40 45
 Leu Pro Pro Gly Asp Arg Gly Cys Arg Asn Gly Gly Gly Arg Gly Pro
 50 55 60

Ala Ala Thr Thr Ser Ser Thr Gly Val Ala Val Gly Ala Glu His Gly
65 70 75 80

Glu Asp Ser Leu Ser Arg Lys Pro Asp Pro Glu Pro Gly Arg Met Asp
85 90 95

His His Gln Pro Gly Thr Gly Arg Tyr Gln Val Leu Leu Asn Glu Glu
100 105 110

Asp Asn Ser Glu Ser Ser Ala Ile Glu Gln Pro Pro Thr Ser Asn Pro
115 120 125

Ala Pro Gln Ile Val Gln Ala Ala Ser Ser Ala Pro Ala Leu Glu Thr
130 135 140

Asp Ser Ser Pro Pro Pro Tyr Ser Ser Ile Thr Val Glu Val Pro Thr
145 150 155 160

Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr Pro Val Pro Pro Pro
165 170 175

Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp Glu Ala Glu Lys Ala
180 185 190

Lys Ala Ala Ala Met Ala Ala Ala Ala Ala Glu Thr Ser Gln Arg Ile
195 200 205

Gln Glu Glu Glu Cys Pro Pro Arg Asp Asp Phe Ser Asp Ala Asp Gln
210 215 220

Leu Arg Val Gly Asn Asp Gly Ile Phe Met Leu Ala Phe Phe Met Ala
225 230 235 240

Phe Ile Phe Asn Trp Leu Gly Phe Cys Leu Ser Phe Cys Ile Thr Asn
245 250 255

Thr Ile Ala Gly Arg Tyr Gly Ala Ile Cys Gly Phe Gly Leu Ser Leu
260 265 270

Ile Lys Trp Ile Leu Ile Val Arg Phe Ser Asp Tyr Phe Thr Gly Tyr
275 280 285

Phe Asn Gly Gln Tyr Trp Leu Trp Trp Ile Phe Leu Val Leu Gly Leu
290 295 300

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 Ser Ala Arg Gly Ala Pro Glu Leu Leu Arg Gly Thr Ala Thr Asn Ala
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gag gtc tcg gcg gcc gct gcg gga gcc aca gga agt gaa gag ctt ccg 202
Glu Val Ser Ala Ala Ala Ala Gly Ala Thr Gly Ser Glu Glu Leu Pro
35 40 45 50

ccg gga gac cgc ggc tgc agg aac gga ggc gga agg ggc cct gcg gcg 250
Pro Gly Asp Arg Gly Cys Arg Asn Gly Gly Gly Arg Gly Pro Ala Ala
55 60 65

acg acg tcg tcg acg ggg gtg gcc gtg gga gct gag cac gga gaa gac 298
Thr Thr Ser Ser Thr Gly Val Ala Val Gly Ala Glu His Gly Glu Asp
70 75 80

tcc ctc tct cgg aag ccg gat ccc gag ccg ggc agg atg gat cac cac 346
Ser Leu Ser Arg Lys Pro Asp Pro Glu Pro Gly Arg Met Asp His His
85 90 95

cag ccg ggg act ggg cgc tac cag gtg ctt ctt aat gaa gag gat aac 394
Gln Pro Gly Thr Gly Arg Tyr Gln Val Leu Leu Asn Glu Glu Asp Asn
100 105 110

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Ser Glu Ser Ser Ala Ile Glu Gln Pro Pro Thr Ser Asn Pro Ala Pro
115 120 125 130

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Gln Ile Val Gln Ala Ala Ser Ser Ala Pro Ala Leu Glu Thr Asp Ser
135 140 145

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Ser	Pro	Pro	Pro	Tyr	Ser	Ser	Ile	Thr	Val	Glu	Val	Pro	Thr	Thr	Ser	
			150					155					160			

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Asp Thr Glu Val Tyr Gly Glu Phe Tyr Pro Val Pro Pro Pro Tyr Ser
165 170 175

ggt gct acc tct ctt cct aca tac gat gaa gct gag aag gct aaa gct 634
Val Ala Thr Ser Leu Pro Thr Tyr Asp Glu Ala Glu Lys Ala Lys Ala
180 185 190

gct gca atg gca gct gca gca gca gaa aca tct caa aga att cag gag 682
Ala Ala Met Ala Ala Ala Ala Ala Glu Thr Ser Gln Arg Ile Gln Glu
195 200 205 210

gaa gag tgt cca cca aga gat gac ttc agt gat gca gac cag ctc aga 730
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215 220 225

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Val Gly Asn Asp Gly Ile Phe Met Leu Ala Phe Phe Met Ala Phe Ile
230 235 240

ttc aac tgg ctt gga ttt tgt tta tcc ttc tgt atc acc aat acc ata 826
Phe Asn Trp Leu Gly Phe Cys Leu Ser Phe Cys Ile Thr Asn Thr Ile
245 250 255

gct gga agg tat ggt gct atc tgc gga ttt ggc ctt tcc ttg atc aaa 874
Ala Gly Arg Tyr Gly Ala Ile Cys Gly Phe Gly Leu Ser Leu Ile Lys
260 265 270

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Trp Ile Leu Ile Val Arg Phe Ser Asp Tyr Phe Thr Gly Tyr Phe Asn
275 280 285 290

gga cag tat tgg ctt tgg tgg ata ttt ctt gta ctt ggc ctg ctc ctt 970
Gly Gln Tyr Trp Leu Trp Trp Ile Phe Leu Val Leu Gly Leu Leu Leu
295 300 305

ttc ttc aga gga ttt gtt aat tat cta aaa gtc aga aac atg tct gaa 1018
Phe Phe Arg Gly Phe Val Asn Tyr Leu Lys Val Arg Asn Met Ser Glu
310 315 320

agt atg gca gct gct cat aga aca agg tat ttc ttc tta ttg 1060
Ser Met Ala Ala Ala His Arg Thr Arg Tyr Phe Phe Leu Leu
325 330 335

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<212> PRT
<213> Homo sapiens
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Ser Arg Ile Trp Pro Lys Lys Ala Ile Gln Glu Ser Asn Asp Thr Asn
      35                    40                45

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 Val Cys Ile Pro Cys Ile Val Ile Pro Val Leu Leu Trp Ile Tyr Lys
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 aaa ttc ctg gag cca tat ata tac cct ctg gtt tcc ccc ttc gtt agt 274
 Lys Phe Leu Glu Pro Tyr Ile Tyr Pro Leu Val Ser Pro Phe Val Ser
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 cgt ata tgg cct aag aaa gca ata caa gaa tcc aat gat aca aac aaa 322
 Arg Ile Trp Pro Lys Lys Ala Ile Gln Glu Ser Asn Asp Thr Asn Lys
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 Gly Lys Val Asn Phe Lys Gly Ala Asp Met Asn Gly Leu Pro Thr Lys
 50 55 60 65
 gga cca aca gaa atc tgt gat aaa aag aaa gac taaagaaatt ttcctaaagg 423
 Gly Pro Thr Glu Ile Cys Asp Lys Lys Lys Asp
 70 75
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1085

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<213> Homo sapiens

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35 40 45
Pro Leu Phe Gly Ile Met Ser Ser Asp Ser Ala Asp Pro Phe Tyr Trp
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Met Arg Val Ile Leu Ala Ser Asn Arg Gly Thr Leu Met Glu His Ser
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Leu Ser Gly Leu

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<212> DNA
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Met Ala Ile Lys Phe Leu Glu Val Ile Lys Pro Phe Cys Val Ile
1 5 10 15
ctg ccg gaa att cag aag cca gag agg aag att cag ttt aag gag aaa 157
Leu Pro Glu Ile Gln Lys Pro Glu Arg Lys Ile Gln Phe Lys Glu Lys
20 25 30
gtg ctg tgg acc gct atc acc ctc ttt atc ttc tta gtg tgc tgc cag 205
Val Leu Trp Thr Ala Ile Thr Leu Phe Ile Phe Leu Val Cys Cys Gln
35 40 45
att ccc ctg ttt ggg atc atg tct tca gat tca gct gac cct ttc tat 253
Ile Pro Leu Phe Gly Ile Met Ser Ser Asp Ser Ala Asp Pro Phe Tyr

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Trp Met Arg Val Ile Leu Ala Ser Asn Arg Gly Thr Leu Met Glu His			
65	70	75	
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Ser Leu Ser Gly Leu			
80			
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<210> 25
 <211> 179
 <212> PRT
 <213> Homo sapiens

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Trp Thr Ala Ile Thr Leu Phe Ile Phe Leu Val Cys Cys Gln Ile Pro																						
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Leu Phe Gly Ile Met Ser Ser Asp Ser Ala Asp Pro Val His Ala Val																						
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Val Tyr Ile Val Phe Met Leu Gly Ser Cys Ala Phe Phe Ser Lys Thr																						
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Trp Ile Glu Val Ser Gly Ser Ser Ala Lys Asp Val Ala Lys Gln Leu																						
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Lys Glu Gln Gln Met Val Met Arg Gly His Arg Glu Thr Ser Met Val																						
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His Glu Leu Asn Arg Tyr Ile Pro Thr Ala Ala Ala Phe Gly Gly Leu																						
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Cys Ile Gly Ala Leu Ser Val Leu Ala Asp Phe Leu Gly Ala Ile Gly																						
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Ser Gly Thr Gly Ile Leu Leu Ala Val Thr Ile Ile Tyr Gln Tyr Phe																						
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Glu Ile Phe Val Lys Glu Gln Ser Glu Val Gly Ser Met Gly Ala Leu																						
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Leu Phe																						
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Ile Met Ala Asn Arg Lys Pro Phe Gln Leu Arg Gly Phe Met Ile Val
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Tyr Asn Phe Ser Leu Val Ala Leu Ser Leu Tyr Ile Val Tyr Glu Phe
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Leu Met Ser Gly Trp Leu Ser Thr Tyr Thr Trp Arg Cys Asp Pro Val
85 90 95
Asp Tyr Ser Asn Ser Pro Glu Ala Leu Arg Met Val Arg Val Ala Trp
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Leu Phe Leu Phe Ser Lys Phe Ile Glu Leu Met Asp Thr Val Ile Phe
115 120 125

Ile Leu Arg Lys Lys Asp Gly Gln Val Thr Phe Leu His Val Phe His
 130 135 140
 His Ser Val Leu Pro Trp Ser Trp Trp Trp Gly Val Lys Ile Ala Pro
 145 150 155 160
 Gly Gly Met Gly Ser Phe His Ala Met Ile Asn Ser Ser Val His Val
 165 170 175
 Ile Met Tyr Leu Tyr Tyr Gly Leu Ser Ala Phe Gly Pro Val Ala Gln
 180 185 190
 Pro Tyr Leu Trp Trp Lys Lys His Met Thr Ala Ile Gln Leu Ile Gln
 195 200 205
 Phe Val Leu Val Ser Leu His Ile Ser Gln Tyr Tyr Phe Met Ser Ser
 210 215 220
 Cys Asn Tyr Gln Tyr Pro Val Ile Ile His Leu Ile Trp Met Tyr Gly
 225 230 235 240
 Thr Ile Phe Phe Met Leu Phe Ser Asn Phe Trp Tyr His Ser Tyr Thr
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 Lys Gly Lys Arg Leu Pro Arg Ala Leu Gln Gln Asn Gly Ala Pro Gly
 260 265 270
 Ile Ala Lys Val Lys Ala Asn
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 tgctccctcc gagegctccg ccgttgcccg cctggcccct acggagtcct tagccagg 118
 atg gag gct gtt gtg aac ttg tac caa gag gtg atg aag cac gca gat 166
 Met Glu Ala Val Val Asn Leu Tyr Gln Glu Val Met Lys His Ala Asp
 1 5 10 15
 ccc cgg atc cag ggc tac cct ctg atg ggg tcc ccc ttg cta atg acc 214
 Pro Arg Ile Gln Gly Tyr Pro Leu Met Gly Ser Pro Leu Leu Met Thr
 20 25 30
 tcc att ctc ctg acc tac gtg tac ttc gtt ctc tca ctt ggg cct cgc 262
 Ser Ile Leu Leu Thr Tyr Val Tyr Phe Val Leu Ser Leu Gly Pro Arg
 35 40 45

atc atg gct aat cgg aag ccc ttc cag ctc cgt ggc ttc atg att gtc	310
Ile Met Ala Asn Arg Lys Pro Phe Gln Leu Arg Gly Phe Met Ile Val	
50 55 60	
tac aac ttc tca ctg gtg gca ctc tcc ctc tac att gtc tat gag ttc	358
Tyr Asn Phe Ser Leu Val Ala Leu Ser Leu Tyr Ile Val Tyr Glu Phe	
65 70 75 80	
ctg atg tcg ggc tgg ctg agc acc tat acc tgg cgc tgt gac cct gtg	406
Leu Met Ser Gly Trp Leu Ser Thr Tyr Thr Trp Arg Cys Asp Pro Val	
85 90 95	
gac tat tcc aac agc cct gag gca ctt agg atg gtt cgg gtg gcc tgg	454
Asp Tyr Ser Asn Ser Pro Glu Ala Leu Arg Met Val Arg Val Ala Trp	
100 105 110	
ctc ttc ctc ttc tcc aag ttc att gag ctg atg gac aca gtg atc ttt	502
Leu Phe Leu Phe Ser Lys Phe Ile Glu Leu Met Asp Thr Val Ile Phe	
115 120 125	
att ctc cga aag aaa gac ggg cag gtg acc ttc cta cat gtc ttc cat	550
Ile Leu Arg Lys Lys Asp Gly Gln Val Thr Phe Leu His Val Phe His	
130 135 140	
cac tct gtg ctt ccc tgg agc tgg tgg tgg ggg gta aag att gcc ccg	598
His Ser Val Leu Pro Trp Ser Trp Trp Trp Gly Val Lys Ile Ala Pro	
145 150 155 160	
gga gga atg ggc tct ttc cat gcc atg ata aac tct tcc gtg cat gtc	646
Gly Gly Met Gly Ser Phe His Ala Met Ile Asn Ser Ser Val His Val	
165 170 175	
ata atg tac ctg tac tac gga tta tct gcc ttt ggc cct gtg gca caa	694
Ile Met Tyr Leu Tyr Tyr Gly Leu Ser Ala Phe Gly Pro Val Ala Gln	
180 185 190	
ccc tac ctt tgg tgg aaa aag cac atg aca gcc att cag ctg atc cag	742
Pro Tyr Leu Trp Trp Lys Lys His Met Thr Ala Ile Gln Leu Ile Gln	
195 200 205	
ttt gtc ctg gtc tca ctg cac atc tcc cag tac tac ttt atg tcc agc	790
Phe Val Leu Val Ser Leu His Ile Ser Gln Tyr Tyr Phe Met Ser Ser	
210 215 220	
tgt aac tac cag tac cca gtc att att cac ctc atc tgg atg tat ggc	838
Cys Asn Tyr Gln Tyr Pro Val Ile Ile His Leu Ile Trp Met Tyr Gly	
225 230 235 240	
acc atc ttc ttc atg ctg ttc tcc aac ttc tgg tat cac tct tat acc	886
Thr Ile Phe Phe Met Leu Phe Ser Asn Phe Trp Tyr His Ser Tyr Thr	
245 250 255	
aag ggc aag cgg ctg ccc cgt gca ctt cag caa aat gga gct cca ggt	934
Lys Gly Lys Arg Leu Pro Arg Ala Leu Gln Gln Asn Gly Ala Pro Gly	
260 265 270	
att gcc aag gtc aag gcc aac tgagaagcat ggccagata ggcccccacc	985

Ile Ala Lys Val Lys Ala Asn
275

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gtgaccaagg cttatgtggt caggactgag caggggactg gccctcccct cccacacagct 1105
gctctacagg gaccacggct ttggttcttc acccacttcc cccgggcagc tccagggatg 1165
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gtggcctttt tcttcacaca gaagaggtca gcaataatgt cactgtggac ccagtctcac 1345
tcctccaccc cacacactga agcagtagct tctgggccaa aggtcagggt gggcgggggc 1405
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ggaaacc 1472

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<211> 137
<212> PRT
<213> Homo sapiens

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Tyr Lys Thr Cys Arg Arg Pro Arg Pro Val Val Thr Thr Thr Thr Ser
35 40 45
Thr Thr Val Val His Ala Pro Tyr Pro Gln Pro Pro Ser Val Pro Pro
50 55 60
Ser Tyr Pro Gly Pro Ser Tyr Gln Gly Tyr His Thr Met Pro Pro Gln
65 70 75 80
Pro Gly Met Pro Ala Ala Pro Tyr Pro Met Gln Tyr Pro Pro Pro Tyr
85 90 95
Pro Ala Gln Pro Met Gly Pro Pro Ala Tyr His Glu Thr Leu Ala Gly
100 105 110
Gly Ala Ala Ala Pro Tyr Pro Ala Ser Gln Pro Pro Tyr Asn Pro Ala
115 120 125
Tyr Met Asp Ala Pro Lys Ala Ala Leu
130 135

<210> 30

<211> 1788
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (145)..(555)

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 ctctgggtga aggcagaggc taac atg ggg ttc gga gcg acc ttg gcc gtt 171
 Met Gly Phe Gly Ala Thr Leu Ala Val
 1 5
 ggc ctg acc atc ttt gtg ctg tct gtc gtc act atc atc atc tgc ttc 219
 Gly Leu Thr Ile Phe Val Leu Ser Val Val Thr Ile Ile Ile Cys Phe
 10 15 20 25
 acc tgc tcc tgc tgc tgc ctt tac aag acg tgc cgc cga cca cgt ccg 267
 Thr Cys Ser Cys Cys Cys Leu Tyr Lys Thr Cys Arg Arg Pro Arg Pro
 30 35 40
 gtt gtc acc acc acc aca tcc acc act gtg gtg cat gcc cct tat cct 315
 Val Val Thr Thr Thr Thr Ser Thr Thr Val Val His Ala Pro Tyr Pro
 45 50 55
 cag cct cca agt gtg ccg ccc agc tac cct gga cca agc tac cag ggc 363
 Gln Pro Pro Ser Val Pro Pro Ser Tyr Pro Gly Pro Ser Tyr Gln Gly
 60 65 70
 tac cac acc atg ccg cct cag cca ggg atg cca gca gca ccc tac cca 411
 Tyr His Thr Met Pro Pro Gln Pro Gly Met Pro Ala Ala Pro Tyr Pro
 75 80 85
 atg cag tac cca cca cct tac cca gcc cag ccc atg ggc cca ccg gcc 459
 Met Gln Tyr Pro Pro Tyr Pro Ala Gln Pro Met Gly Pro Pro Ala
 90 95 100 105
 tac cac gag acc ctg gct gga gga gca gcc gcg ccc tac ccc gcc agc 507
 Tyr His Glu Thr Leu Ala Gly Gly Ala Ala Ala Pro Tyr Pro Ala Ser
 110 115 120
 cag cct cct tac aac ccg gcc tac atg gat gcc ccg aag gcg gcc ctc 555
 Gln Pro Pro Tyr Asn Pro Ala Tyr Met Asp Ala Pro Lys Ala Ala Leu
 125 130 135
 tgagcattcc ctggcctctc tggctgccac ttggttatgt tgtgtgtgtg cgtgagtgg 615
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 gcccattgtg tgctgtgtgt gtctgcctg tatatgtggc ttctctgat gctgacaagg 735
 tggggaacaa tccttgccag agtgggctgg gaccagactt tggtctcttc ctcacctgaa 795

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 caagttggac tttgatcctt tgggcagatg tcccattgct ccctggagcc tgtcatgcct 1155
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<210> 31
 <211> 118
 <212> PRT
 <213> Homo sapiens

<400> 31
 Met Gly Phe Gly Ala Thr Leu Ala Val Gly Leu Thr Ile Phe Val Leu
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 Ser Val Val Thr Ile Ile Ile Cys Phe Thr Cys Ser Cys Cys Cys Leu
 20 25 30
 Tyr Lys Thr Cys Arg Arg Pro Arg Pro Val Val Thr Thr Thr Thr Ser
 35 40 45
 Thr Thr Val Val His Ala Pro Tyr Pro Gln Pro Pro Ser Val Pro Pro
 50 55 60
 Ser Tyr Pro Gly Pro Ser Tyr Gln Gly Tyr His Thr Met Pro Pro Gln
 65 70 75 80
 Pro Gly Met Pro Ala Ala Pro Tyr Pro Met Gln Tyr Pro Pro Pro Tyr

Pro Ala Gln Pro Met Gly Pro Pro Ala Tyr His Glu Thr Leu Ala Gly	85	90	95
100	105	110	
Glu Cys Pro Cys Gln Leu	115		
<210> 32			
<211> 1908			
<212> DNA			
<213> Homo sapiens			
<220>			
<221> CDS			
<222> (91)..(444)			
<400> 32			
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ggaggcctct ggggtgaaggc agaggctaac atg ggg ttc gga gcg acc ttg gcc	114		
Met Gly Phe Gly Ala Thr Leu Ala	1	5	
gtt ggc ctg acc atc ttt gtg ctg tct gtc gtc act atc atc atc tgc	162		
Val Gly Leu Thr Ile Phe Val Leu Ser Val Val Thr Ile Ile Ile Cys	10	15	20
ttc acc tgc tcc tgc tgc tgc ctt tac aag acg tgc cgc cga cca cgt	210		
Phe Thr Cys Ser Cys Cys Cys Leu Tyr Lys Thr Cys Arg Arg Pro Arg	25	30	35
ccg gtt gtc acc acc acc aca tcc acc act gtg gtg cat gcc cct tat	258		
Pro Val Val Thr Thr Thr Thr Ser Thr Thr Val Val His Ala Pro Tyr	45	50	55
cct cag cct cca agt gtg ccg ccc agc tac cct gga cca agc tac cag	306		
Pro Gln Pro Pro Ser Val Pro Pro Ser Tyr Pro Gly Pro Ser Tyr Gln	60	65	70
ggc tac cac acc atg ccg cct cag cca ggg atg cca gca gca ccc tac	354		
Gly Tyr His Thr Met Pro Pro Gln Pro Gly Met Pro Ala Ala Pro Tyr	75	80	85
cca atg cag tac cca cca cct tac cca gcc cag ccc atg ggc cca ccg	402		
Pro Met Gln Tyr Pro Pro Tyr Pro Ala Gln Pro Met Gly Pro Pro	90	95	100
gcc tac cac gag acc ctg gct ggt gag tgc ccc tgc caa ctc	444		
Ala Tyr His Glu Thr Leu Ala Gly Glu Cys Pro Cys Gln Leu	105	110	115
tagccctgcc cgacttcccg agtctctgcc agcatccctc gggcacccat cccaaactac	504		
atcactcaac aggcctctgc ccctttctgc ttgcctgcc ctcacagggc agcccaccat	564		

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tcaccagagc	tgtcttagct	caaatctgtt	gtgtttctga	gtctagggtc	tgtacacttg	1884
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<210> 33
<211> 168
<212> PRT
<213> Homo sapiens
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<400> 33
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20 25 30

Pro Pro Tyr Thr Asp Ala Pro Pro Ala Tyr Ser Glu Leu Tyr Arg Pro
35 40 45

Ser Phe Val His Pro Gly Ala Ala Thr Val Pro Thr Met Ser Ala Ala
50 55 60

Phe Pro Gly Ala Ser Leu Tyr Leu Pro Met Ala Gln Ser Val Ala Val
65 70 75 80

Gly Pro Leu Gly Ser Thr Ile Pro Met Ala Tyr Tyr Pro Val Gly Pro
85 90 95

Ile Tyr Pro Pro Gly Ser Thr Val Leu Val Glu Gly Gly Tyr Asp Ala
100 105 110

Gly Ala Arg Phe Gly Ala Gly Ala Thr Ala Gly Asn Ile Pro Pro Pro
115 120 125

Pro Pro Gly Cys Pro Pro Asn Ala Ala Gln Leu Ala Val Met Gln Gly
130 135 140

Ala Asn Val Leu Val Thr Gln Arg Lys Gly Asn Phe Phe Met Gly Gly
145 150 155 160

Ser Asp Gly Gly Tyr Thr Ile Trp
165

<210> 34
<211> 1897
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (70)..(573)

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Met Asn Ser Lys Gly Gln Tyr Pro Thr Gln Pro Thr Tyr Pro
1 5 10
gtg cag cct cct ggg aat cca gta tac cct cag acc ttg cat ctt cct 159
Val Gln Pro Pro Gly Asn Pro Val Tyr Pro Gln Thr Leu His Leu Pro
15 20 25 30
cag gct cca ccc tat acc gat gct cca cct gcc tac tca gag ctc tat 207
Gln Ala Pro Pro Tyr Thr Asp Ala Pro Pro Ala Tyr Ser Glu Leu Tyr
35 40 45
cgt ccg agc ttt gtg cac cca ggg gct gcc aca gtc ccc acc atg tca 255
Arg Pro Ser Phe Val His Pro Gly Ala Ala Thr Val Pro Thr Met Ser
50 55 60

gcc gca ttt cct gga gcc tct ctg tat ctt ccc atg gcc cag tct gtc	303
Ala Ala Phe Pro Gly Ala Ser Leu Tyr Leu Pro Met Ala Gln Ser Val	
65 70 75	
gct gtt ggg cct tta ggt tcc aca atc ccc atg gct tat tat cca gtc	351
Ala Val Gly Pro Leu Gly Ser Thr Ile Pro Met Ala Tyr Tyr Pro Val	
80 85 90	
ggt ccc atc tat cca cct ggc tcc aca gtg ctg gtg gaa gga ggg tat	399
Gly Pro Ile Tyr Pro Pro Gly Ser Thr Val Leu Val Glu Gly Gly Tyr	
95 100 105 110	
gat gca ggt gcc aga ttt gga gct ggg gct act gct ggc aac att cct	447
Asp Ala Gly Ala Arg Phe Gly Ala Gly Ala Thr Ala Gly Asn Ile Pro	
115 120 125	
cct cca cct cct gga tgc cct ccc aat gct gct cag ctt gca gtc atg	495
Pro Pro Pro Pro Gly Cys Pro Pro Asn Ala Ala Gln Leu Ala Val Met	
130 135 140	
cag gga gcc aac gtc ctc gta act cag cgg aag ggg aac ttc ttc atg	543
Gln Gly Ala Asn Val Leu Val Thr Gln Arg Lys Gly Asn Phe Phe Met	
145 150 155	
ggt ggt tca gat ggt ggc tac acc atc tgg tgaggaacca aggccacctc	593
Gly Gly Ser Asp Gly Gly Tyr Thr Ile Trp	
160 165	
tgtgccggga aagacatcac ataccttcag cactttctcac aatgtaactg ctttagtcat	653
attaacctga agttgcagtt tagacacatg ttgttgggggt gtctttcttg tgcccaaact	713
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attttgagggt aggggaggta tccattcata aaatgaatgt ggggtgaagcc gccctaagga	833
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aacatcaaat taggtttgga gggaactttg atcttctctaa gaattaaagt tgccaaatta	953
ttctgattgg tctttaatct cctttaagtc tttgatatat attacttggt ataaatggaa	1013
cgcattagtt gtctgccttt tcctttccat cccttgcccc acccatccca tctccaaccc	1073
tagtcttcca tttcctcccg ccagtctcca ttgaatcaat ggtgcaggac agaaagccag	1133
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 <211> 455
 <212> PRT
 <213> Homo sapiens

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 20 25 30
 Tyr Glu Ile Arg Gln Tyr Val Val Gln Val Ile Phe Ser Val Thr Phe
 35 40 45
 Ala Phe Ser Cys Thr Met Phe Glu Leu Ile Ile Phe Glu Ile Leu Gly
 50 55 60
 Val Leu Asn Ser Ser Ser Arg Tyr Phe His Trp Lys Met Asn Leu Cys
 65 70 75 80
 Val Ile Leu Leu Ile Leu Val Phe Met Val Pro Phe Tyr Ile Gly Tyr
 85 90 95
 Phe Ile Val Ser Asn Ile Arg Leu Leu His Lys Gln Arg Leu Leu Phe
 100 105 110
 Ser Cys Leu Leu Trp Leu Thr Phe Met Tyr Phe Phe Trp Lys Leu Gly
 115 120 125
 Asp Pro Phe Pro Ile Leu Ser Pro Lys His Gly Ile Leu Ser Ile Glu
 130 135 140
 Gln Leu Ile Ser Arg Val Gly Val Ile Gly Val Thr Leu Met Ala Leu
 145 150 155 160
 Leu Ser Gly Phe Gly Ala Val Asn Cys Pro Tyr Thr Tyr Met Ser Tyr
 165 170 175
 Phe Leu Arg Asn Val Thr Asp Thr Asp Ile Leu Ala Leu Glu Arg Arg

180						185						190					
Leu	Leu	Gln	Thr	Met	Asp	Met	Ile	Ile	Ser	Lys	Lys	Lys	Arg	Met	Ala		
		195					200					205					
Met	Ala	Arg	Arg	Thr	Met	Phe	Gln	Lys	Gly	Glu	Val	His	Asn	Lys	Pro		
	210					215					220						
Ser	Gly	Phe	Trp	Gly	Met	Ile	Lys	Ser	Val	Thr	Thr	Ser	Ala	Ser	Gly		
225					230					235					240		
Ser	Glu	Asn	Leu	Thr	Leu	Ile	Gln	Gln	Glu	Val	Asp	Ala	Leu	Glu	Glu		
				245					250					255			
Leu	Ser	Arg	Gln	Leu	Phe	Leu	Glu	Thr	Ala	Asp	Leu	Tyr	Ala	Thr	Lys		
			260					265					270				
Glu	Arg	Ile	Glu	Tyr	Ser	Lys	Thr	Phe	Lys	Gly	Lys	Tyr	Phe	Asn	Phe		
		275					280					285					
Leu	Gly	Tyr	Phe	Phe	Ser	Ile	Tyr	Cys	Val	Trp	Lys	Ile	Phe	Met	Ala		
	290						295				300						
Thr	Ile	Asn	Ile	Val	Phe	Asp	Arg	Val	Gly	Lys	Thr	Asp	Pro	Val	Thr		
305					310					315					320		
Arg	Gly	Ile	Glu	Ile	Thr	Val	Asn	Tyr	Leu	Gly	Ile	Gln	Phe	Asp	Val		
				325					330					335			
Lys	Phe	Trp	Ser	Gln	His	Ile	Ser	Phe	Ile	Leu	Val	Gly	Ile	Ile	Ile		
			340					345					350				
Val	Thr	Ser	Ile	Arg	Gly	Leu	Leu	Ile	Thr	Leu	Thr	Lys	Phe	Phe	Tyr		
		355					360					365					
Ala	Ile	Ser	Ser	Ser	Lys	Ser	Ser	Asn	Val	Ile	Val	Leu	Leu	Leu	Ala		
	370						375				380						
Gln	Ile	Met	Gly	Met	Tyr	Phe	Val	Ser	Ser	Val	Leu	Leu	Ile	Arg	Met		
385					390					395				400			
Ser	Met	Pro	Leu	Glu	Tyr	Arg	Thr	Ile	Ile	Thr	Glu	Val	Leu	Gly	Glu		
				405					410					415			
Leu	Gln	Phe	Asn	Phe	Tyr	His	Arg	Trp	Phe	Asp	Val	Ile	Phe	Leu	Val		
			420					425					430				
Ser	Ala	Leu	Ser	Ser	Ile	Leu	Phe	Leu	Tyr	Leu	Ala	His	Lys	Gln	Ala		
		435					440						445				
Pro	Glu	Lys	Gln	Met	Ala	Pro											
	450					455											

<210> 36
 <211> 1903
 <212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (116)..(1480)

<400> 36

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tgctgtggcc tcggggagtg ggaagtggag gcaggagcct tccttacact tcgcc atg 118
Met
1

agt ttc ctc atc gac tcc agc atc atg att acc tcc cag ata cta ttt 166
Ser Phe Leu Ile Asp Ser Ser Ile Met Ile Thr Ser Gln Ile Leu Phe
5 10 15

ttt gga ttt ggg tgg ctt ttc ttc atg cgc caa ttg ttt aaa gac tat 214
Phe Gly Phe Gly Trp Leu Phe Phe Met Arg Gln Leu Phe Lys Asp Tyr
20 25 30

gag ata cgt cag tat gtt gta cag gtg atc ttc tcc gtg acg ttt gca 262
Glu Ile Arg Gln Tyr Val Val Gln Val Ile Phe Ser Val Thr Phe Ala
35 40 45

ttt tct tgc acc atg ttt gag ctc atc atc ttt gaa atc tta gga gta 310
Phe Ser Cys Thr Met Phe Glu Leu Ile Ile Phe Glu Ile Leu Gly Val
50 55 60 65

ttg aat agc agc tcc cgt tat ttt cac tgg aaa atg aac ctg tgt gta 358
Leu Asn Ser Ser Ser Arg Tyr Phe His Trp Lys Met Asn Leu Cys Val
70 75 80

att ctg ctg atc ctg gtt ttc atg gtg cct ttt tac att ggc tat ttt 406
Ile Leu Leu Ile Leu Val Phe Met Val Pro Phe Tyr Ile Gly Tyr Phe
85 90 95

att gtg agc aat atc cga cta ctg cat aaa caa cga ctg ctt ttt tcc 454
Ile Val Ser Asn Ile Arg Leu Leu His Lys Gln Arg Leu Leu Phe Ser
100 105 110

tgt ctc tta tgg ctg acc ttt atg tat ttc ttc tgg aaa cta gga gat 502
Cys Leu Leu Trp Leu Thr Phe Met Tyr Phe Phe Trp Lys Leu Gly Asp
115 120 125

ccc ttt ccc att ctc agc cca aaa cat ggg atc tta tcc ata gaa cag 550
Pro Phe Pro Ile Leu Ser Pro Lys His Gly Ile Leu Ser Ile Glu Gln
130 135 140 145

ctc atc agc cgg gtt ggt gtg att gga gtg act ctc atg gct ctt ctt 598
Leu Ile Ser Arg Val Gly Val Ile Gly Val Thr Leu Met Ala Leu Leu
150 155 160

tct gga ttt ggt gct gtc aac tgc cca tac act tac atg tct tac ttc 646
Ser Gly Phe Gly Ala Val Asn Cys Pro Tyr Thr Tyr Met Ser Tyr Phe
165 170 175

ctc agg aat gtg act gac acg gat att cta gcc ctg gaa cgg cga ctg	694
Leu Arg Asn Val Thr Asp Thr Asp Ile Leu Ala Leu Glu Arg Arg Leu	
180 185 190	
ctg caa acc atg gat atg atc ata agc aaa aag aaa agg atg gca atg	742
Leu Gln Thr Met Asp Met Ile Ile Ser Lys Lys Lys Arg Met Ala Met	
195 200 205	
gca cgg aga aca atg ttc cag aag ggg gaa gtg cat aac aaa cca tca	790
Ala Arg Arg Thr Met Phe Gln Lys Gly Glu Val His Asn Lys Pro Ser	
210 215 220 225	
ggg ttc tgg gga atg ata aaa agt gtt acc act tca gca tca gga agt	838
Gly Phe Trp Gly Met Ile Lys Ser Val Thr Thr Ser Ala Ser Gly Ser	
230 235 240	
gaa aat ctt act ctt att caa cag gaa gtg gat gct ttg gaa gaa tta	886
Glu Asn Leu Thr Leu Ile Gln Gln Glu Val Asp Ala Leu Glu Glu Leu	
245 250 255	
agc agg cag ctt ttt ctg gaa aca gct gat cta tat gct acc aag gag	934
Ser Arg Gln Leu Phe Leu Glu Thr Ala Asp Leu Tyr Ala Thr Lys Glu	
260 265 270	
aga ata gaa tac tcc aaa acc ttc aag ggg aaa tat ttt aat ttt ctt	982
Arg Ile Glu Tyr Ser Lys Thr Phe Lys Gly Lys Tyr Phe Asn Phe Leu	
275 280 285	
ggg tac ttt ttc tct att tac tgt gtt tgg aaa att ttc atg gct acc	1030
Gly Tyr Phe Phe Ser Ile Tyr Cys Val Trp Lys Ile Phe Met Ala Thr	
290 295 300 305	
atc aat att gtt ttt gat cga gtt ggg aaa acg gat cct gtc aca aga	1078
Ile Asn Ile Val Phe Asp Arg Val Gly Lys Thr Asp Pro Val Thr Arg	
310 315 320	
ggc att gag atc act gtg aat tat ctg gga atc caa ttt gat gtg aag	1126
Gly Ile Glu Ile Thr Val Asn Tyr Leu Gly Ile Gln Phe Asp Val Lys	
325 330 335	
ttt tgg tcc caa cac att tcc ttc att ctt gtt gga ata atc atc gtc	1174
Phe Trp Ser Gln His Ile Ser Phe Ile Leu Val Gly Ile Ile Ile Val	
340 345 350	
aca tcc atc aga gga ttg ctg atc act ctt acc aag ttc ttt tat gcc	1222
Thr Ser Ile Arg Gly Leu Leu Ile Thr Leu Thr Lys Phe Phe Tyr Ala	
355 360 365	
atc tct agc agt aag tcc tcc aat gtc att gtc ctg cta tta gca cag	1270
Ile Ser Ser Ser Lys Ser Ser Asn Val Ile Val Leu Leu Leu Ala Gln	
370 375 380 385	
ata atg ggc atg tac ttt gtc tcc tct gtg ctg ctg atc cga atg agt	1318
Ile Met Gly Met Tyr Phe Val Ser Ser Val Leu Leu Ile Arg Met Ser	
390 395 400	
atg cct tta gaa tac cgc acc ata atc act gaa gtc ctt gga gaa ctg	1366

Met Pro Leu Glu Tyr Arg Thr Ile Ile Thr Glu Val Leu Gly Glu Leu
405 410 415

cag ttc aac ttc tat cac cgt tgg ttt gat gtg atc ttc ctg gtc agc 1414
Gln Phe Asn Phe Tyr His Arg Trp Phe Asp Val Ile Phe Leu Val Ser
420 425 430

gct ctc tct agc ata ctc ttc ctc tat ttg gct cac aaa cag gca cca 1462
Ala Leu Ser Ser Ile Leu Phe Leu Tyr Leu Ala His Lys Gln Ala Pro
435 440 445

gag aag caa atg gca cct tgaacttaag cctactacag actgtagag 1510
Glu Lys Gln Met Ala Pro
450 455

gccagtgggtt tcaaaattta gatataagag gggggaaaaa tggaaccagg gcctgacatt 1570

ttataaaciaa acaaaatgct atggtagcat ttttcacctt catagcatac tccttccccg 1630

tcaggtgata ctatgaccat gagtagcatc agccagaaca tgagagggag aactaactca 1690

agacaatact cagcagagag catcccggtgt ggatatgagg ctggtgtaga ggcggagagg 1750

agccaagaaa ctaaagggtga aaaatacact ggaactctgg ggcaagacat gtctatggta 1810

gctgagccaa acacgtagga tttccggtttt aagggttcaca tggaagagggt tatagctttg 1870

ccttgagatt gactcattaa aatcagagac tgt 1903

<210> 37
<211> 322
<212> PRT
<213> Homo sapiens

<400> 37
Met Ser Ser Leu Gly Gly Gly Ser Gln Asp Ala Gly Gly Ser Ser Ser
1 5 10 15

Ser Ser Thr Asn Gly Ser Gly Gly Ser Gly Ser Ser Gly Pro Lys Ala
20 25 30

Gly Ala Ala Asp Lys Ser Ala Val Val Ala Ala Ala Ala Pro Ala Ser
35 40 45

Val Ala Asp Asp Thr Pro Pro Pro Glu Arg Arg Asn Lys Ser Gly Ile
50 55 60

Ile Ser Glu Pro Leu Asn Lys Ser Leu Arg Arg Ser Arg Pro Leu Ser
65 70 75 80

His Tyr Ser Ser Phe Gly Ser Ser Gly Gly Ser Gly Gly Gly Ser Met
85 90 95

Met Gly Gly Glu Ser Ala Asp Lys Ala Thr Ala Ala Ala Ala Ala Ala
100 105 110

103742903 032300Z

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<210> 38
<211> 1448
<212> DNA
<213> Homo sapiens
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<220>  
<221> CDS  
<222> (292) .. (1257)
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ccctgccccg cccctcccc teggcctcgc ggcgacggcg gcggtggcgg cttggacgac 120
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tcggagagccc gagtgaagac atttccacct ggacacctga ccatgtgcct gccctgagca 180
gcgaggcccca ccaggcatct ctgttggtggg cagcagggcc aggtcctggt ctgtggaccc 240
tcggcagttg gcaggetccc tctgcagtgg ggtctggggc tcggccccac c atg tcg 297
Met Ser
1
agc ctc ggc ggt ggc tcc cag gat gcc ggc ggc agt agc agc agc agc 345
Ser Leu Gly Gly Gly Ser Gln Asp Ala Gly Gly Ser Ser Ser Ser Ser
5 10 15
acc aat ggc agc ggt ggc agt ggc agc agt ggc cca aag gca gga gca 393
Thr Asn Gly Ser Gly Gly Ser Gly Ser Ser Gly Pro Lys Ala Gly Ala
20 25 30
gca gac aag agt gca gtg gtg gct gcc gcc gca cca gcc tca gtg gca 441
Ala Asp Lys Ser Ala Val Val Ala Ala Ala Pro Ala Ser Val Ala
35 40 45 50
gat gac aca cca ccc ccc gag cgt cgg aac aag agc ggt atc atc agt 489
Asp Asp Thr Pro Pro Pro Glu Arg Arg Asn Lys Ser Gly Ile Ile Ser
55 60 65
gag ccc ctc aac aag agc ctg cgc cgc tcc cgc ccg ctc tcc cac tac 537
Glu Pro Leu Asn Lys Ser Leu Arg Arg Ser Arg Pro Leu Ser His Tyr
70 75 80
tct tct ttt ggc agc agt ggt ggt agt ggc ggt ggc agc atg atg ggc 585
Ser Ser Phe Gly Ser Ser Gly Gly Ser Gly Gly Gly Ser Met Met Gly
85 90 95
gga gag tct gct gac aag gcc act gcg gct gca gcc gct gcc tcc ctg 633
Gly Glu Ser Ala Asp Lys Ala Thr Ala Ala Ala Ala Ala Ala Ser Leu
100 105 110
ttg gcc aat ggg cat gac ctg gcg gcg gcc atg gcg gtg gac aaa agc 681
Leu Ala Asn Gly His Asp Leu Ala Ala Ala Met Ala Val Asp Lys Ser
115 120 125 130
aac cct acc tca aag cac aaa agt ggt gct gtg gcc agc ctg ctg agc 729
Asn Pro Thr Ser Lys His Lys Ser Gly Ala Val Ala Ser Leu Leu Ser
135 140 145
aag gca gag cgg gcc acg gag ctg gca gcc gag gga cag ctg acg ctg 777
Lys Ala Glu Arg Ala Thr Glu Leu Ala Ala Glu Gly Gln Leu Thr Leu
150 155 160
cag cag ttt gcg cag tcc aca gag atg ctg aag cgc gtg gtg cag gag 825
Gln Gln Phe Ala Gln Ser Thr Glu Met Leu Lys Arg Val Val Gln Glu
165 170 175
cat ctc ccg ctg atg agc gag gcg ggt gct ggc ctg cct gac atg gag 873
His Leu Pro Leu Met Ser Glu Ala Gly Ala Gly Leu Pro Asp Met Glu
180 185 190
gct gtg gca ggt gcc gaa gcc ctc aat ggc cag tcc gac ttc ccc tac 921

DOUGLAS BROWN

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<210> 39
<211> 313
<212> PRT
<213> Homo sapiens
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<400> 39
Met Ala Gly Gln Pro Gly His Met Pro His Gly Gly Ser Ser Asn Asn
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Leu Cys His Thr Leu Gly Pro Val His Pro Pro Asp Pro Gln Arg His
20 25 30
Pro Asn Thr Leu Ser Phe Arg Cys Ser Leu Ala Asp Phe Gln Ile Glu
35 40 45
Lys Lys Ile Gly Arg Gly Gln Phe Ser Glu Val Tyr Lys Ala Thr Cys
50 55 60

Leu Leu Asp Arg Lys Thr Val Ala Leu Lys Lys Val Gln Ile Phe Glu
 65 70 75 80
 Met Met Asp Ala Lys Ala Arg Gln Asp Cys Val Lys Glu Ile Gly Leu
 85 90 95
 Leu Lys Gln Leu Asn His Pro Asn Ile Ile Lys Tyr Leu Asp Ser Phe
 100 105 110
 Ile Glu Asp Asn Glu Leu Asn Ile Val Leu Glu Leu Ala Asp Ala Gly
 115 120 125
 Asp Leu Ser Gln Met Ile Lys Tyr Phe Lys Lys Gln Lys Arg Leu Ile
 130 135 140
 Pro Glu Arg Thr Val Trp Lys Tyr Phe Val Gln Leu Cys Ser Ala Val
 145 150 155 160
 Glu His Met His Ser Arg Arg Val Met His Arg Asp Ile Lys Pro Ala
 165 170 175
 Asn Val Phe Ile Thr Ala Thr Gly Val Val Lys Leu Gly Asp Leu Gly
 180 185 190
 Leu Gly Arg Phe Phe Ser Ser Glu Thr Thr Ala Ala His Ser Leu Val
 195 200 205
 Gly Thr Pro Tyr Tyr Met Ser Pro Glu Arg Ile His Glu Asn Gly Tyr
 210 215 220
 Asn Phe Lys Ser Asp Ile Trp Ser Leu Gly Cys Leu Leu Tyr Glu Met
 225 230 235 240
 Ala Ala Leu Gln Ser Pro Phe Tyr Gly Asp Lys Met Asn Leu Phe Ser
 245 250 255
 Leu Cys Gln Lys Ile Glu Gln Cys Asp Tyr Pro Pro Leu Pro Gly Glu
 260 265 270
 His Tyr Ser Glu Lys Leu Arg Glu Leu Val Ser Met Cys Ile Cys Pro
 275 280 285
 Asp Pro His Gln Arg Pro Asp Ile Gly Tyr Val His Gln Val Ala Lys
 290 295 300
 Gln Met His Ile Trp Met Ser Ser Thr
 305 310

<210> 40
 <211> 1597
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS

<222> (153)..(1091)

<400> 40

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ggcggaaccg agctgacggg cgtgcgggccg ctgcgccgca aactcgtgtg ggacgcaccg 60

ctccagccgc ccgcggggcca gcgcaccggt cccccagcgg cagccgagcc cgcccgcgcg 120

ccgttcgtgc cctcgtgagg ctggcatgca gg atg gca gga cag ccc ggc cac 173
                               Met Ala Gly Gln Pro Gly His
                               1                               5

atg ccc cat gga ggg agt tcc aac aac ctc tgc cac acc ctg ggg cct 221
Met Pro His Gly Gly Ser Ser Asn Asn Leu Cys His Thr Leu Gly Pro
          10                               15                               20

gtg cat cct cct gac cca cag agg cat ccc aac acg ctg tct ttt cgc 269
Val His Pro Pro Asp Pro Gln Arg His Pro Asn Thr Leu Ser Phe Arg
          25                               30                               35

tgc tcg ctg gcg gac ttc cag atc gaa aag aag ata ggc cga gga cag 317
Cys Ser Leu Ala Asp Phe Gln Ile Glu Lys Lys Ile Gly Arg Gly Gln
          40                               45                               50                               55

ttc agc gag gtg tac aag gcc acc tgc ctg ctg gac agg aag aca gtg 365
Phe Ser Glu Val Tyr Lys Ala Thr Cys Leu Leu Asp Arg Lys Thr Val
          60                               65                               70

gct ctg aag aag gtg cag atc ttt gag atg atg gac gcc aag gcg agg 413
Ala Leu Lys Lys Val Gln Ile Phe Glu Met Met Asp Ala Lys Ala Arg
          75                               80                               85

cag gac tgt gtc aag gag atc ggc ctc ttg aag caa ctg aac cac cca 461
Gln Asp Cys Val Lys Glu Ile Gly Leu Leu Lys Gln Leu Asn His Pro
          90                               95                               100

aat atc atc aag tat ttg gac tcg ttt atc gaa gac aac gag ctg aac 509
Asn Ile Ile Lys Tyr Leu Asp Ser Phe Ile Glu Asp Asn Glu Leu Asn
          105                               110                               115

att gtg ctg gag ttg gct gac gca ggg gac ctc tcg cag atg atc aag 557
Ile Val Leu Glu Leu Ala Asp Ala Gly Asp Leu Ser Gln Met Ile Lys
          120                               125                               130                               135

tac ttt aag aag cag aag cgg ctc atc ccg gag agg aca gta tgg aag 605
Tyr Phe Lys Lys Gln Lys Arg Leu Ile Pro Glu Arg Thr Val Trp Lys
          140                               145                               150

tac ttt gtg cag ctg tgc agc gcc gtg gag cac atg cat tca cgc cgg 653
Tyr Phe Val Gln Leu Cys Ser Ala Val Glu His Met His Ser Arg Arg
          155                               160                               165

gtg atg cac cga gac atc aag cct gcc aac gtg ttc atc aca gcc acg 701
Val Met His Arg Asp Ile Lys Pro Ala Asn Val Phe Ile Thr Ala Thr
          170                               175                               180

ggc gtc gtg aag ctc ggt gac ctt ggt ctg ggc cgc ttc ttc agc tct 749
Gly Val Val Lys Leu Gly Asp Leu Gly Leu Gly Arg Phe Phe Ser Ser

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185	190	195	
gag acc acc gca gcc cac tcc cta gtg ggg acg ccc tac tac atg tca			797
Glu Thr Thr Ala Ala His Ser Leu Val Gly Thr Pro Tyr Tyr Met Ser			
200	205	210	215
ccg gag agg atc cat gag aac ggc tac aac ttc aag tcc gac atc tgg			845
Pro Glu Arg Ile His Glu Asn Gly Tyr Asn Phe Lys Ser Asp Ile Trp			
	220	225	230
tcc ttg ggc tgt ctg ctg tac gag atg gca gcc ctc cag agc ccc ttc			893
Ser Leu Gly Cys Leu Leu Tyr Glu Met Ala Ala Leu Gln Ser Pro Phe			
	235	240	245
tat gga gat aag atg aat ctc ttc tcc ctg tgc cag aag atc gag cag			941
Tyr Gly Asp Lys Met Asn Leu Phe Ser Leu Cys Gln Lys Ile Glu Gln			
	250	255	260
tgt gac tac ccc cca ctc ccc ggg gag cac tac tcc gag aag tta cga			989
Cys Asp Tyr Pro Pro Leu Pro Gly Glu His Tyr Ser Glu Lys Leu Arg			
	265	270	275
gaa ctg gtc agc atg tgc atc tgc cct gac ccc cac cag aga cct gac			1037
Glu Leu Val Ser Met Cys Ile Cys Pro Asp Pro His Gln Arg Pro Asp			
280	285	290	295
atc gga tac gtg cac cag gtg gcc aag cag atg cac atc tgg atg tcc			1085
Ile Gly Tyr Val His Gln Val Ala Lys Gln Met His Ile Trp Met Ser			
	300	305	310
agc acc tgagcgtgga tgcaccgtgc cttatcaaag ccagcaccac tttgccttac			1141
Ser Thr			
ttgagtcgtc ttctotttoga gtggccacct ggtagcctag aacagctaag accacagggt			1201
tcagcaggtt ccccaaaagg ctgcccagcc ttacagcaga tgctgaaggc agagcagctg			1261
agggaggggc gctggccaca tgtcactgat ggtcagattc caaagtcctt tctttatact			1321
gttgtggaca atctcagctg ggtcaataag ggcaggtggt tcagcgagcc acggcagccc			1381
cctgtatctg gattgtaatg tgaatcttta gggtaatcc tccagtgacc tgtcaaggct			1441
tatgctaaca ggagacttgc aggagaccgt gtgatttgtg tagtgagcct ttgaaaatgg			1501
ttagtaccgg gttcagttta gttcttggta tcttttcaat caagctgtgt gcttaattta			1561
ctctgttgta aagggataaa gtggaaatca tttttt			1597
<210> 41			
<211> 371			
<212> PRT			
<213> Homo sapiens			
<400> 41			
Met Ser His Glu Lys Ser Phe Leu Val Ser Gly Asp Asn Tyr Pro Pro			

1	5	10	15
Pro Asn Pro Gly Tyr Pro Gly Gly Pro Gln Pro Pro Met Pro Pro Tyr	20	25	30
Ala Gln Pro Pro Tyr Pro Gly Ala Pro Tyr Pro Gln Pro Pro Phe Gln	35	40	45
Pro Ser Pro Tyr Gly Gln Pro Gly Tyr Pro His Gly Pro Ser Pro Tyr	50	55	60
Pro Gln Gly Gly Tyr Pro Gln Gly Pro Tyr Pro Gln Gly Gly Tyr Pro	65	70	75
Gln Gly Pro Tyr Pro Gln Glu Gly Tyr Pro Gln Gly Pro Tyr Pro Gln	85	90	95
Gly Gly Tyr Pro Gln Gly Pro Tyr Pro Gln Ser Pro Phe Pro Pro Asn	100	105	110
Pro Tyr Gly Gln Pro Gln Val Phe Pro Gly Gln Asp Pro Asp Ser Pro	115	120	125
Gln His Gly Asn Tyr Gln Glu Glu Gly Pro Pro Ser Tyr Tyr Asp Asn	130	135	140
Gln Asp Phe Pro Ala Thr Asn Trp Asp Asp Lys Ser Ile Arg Gln Ala	145	150	155
Phe Ile Arg Lys Val Phe Leu Val Leu Thr Leu Gln Leu Ser Val Thr	165	170	175
Leu Ser Thr Val Ser Val Phe Thr Phe Val Ala Glu Val Lys Gly Phe	180	185	190
Val Arg Glu Asn Val Trp Thr Tyr Tyr Val Ser Tyr Ala Val Phe Phe	195	200	205
Ile Ser Leu Ile Val Leu Ser Cys Cys Gly Asp Phe Arg Arg Lys His	210	215	220
Pro Trp Asn Leu Val Ala Leu Ser Val Leu Thr Ala Ser Leu Ser Tyr	225	230	235
Met Val Gly Met Ile Ala Ser Phe Tyr Asn Thr Glu Ala Val Ile Met	245	250	255
Ala Val Gly Ile Thr Thr Ala Val Cys Phe Thr Val Val Ile Phe Ser	260	265	270
Met Gln Thr Arg Tyr Asp Phe Thr Ser Cys Met Gly Val Leu Leu Val	275	280	285
Ser Met Val Val Leu Phe Ile Phe Ala Ile Leu Cys Ile Phe Ile Arg	290	295	300
Asn Arg Ile Leu Glu Ile Val Tyr Ala Ser Leu Gly Ala Leu Leu Phe			

[illegible]

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<210> 42
<211> 1781
<212> DNA
<213> Homo sapiens
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<220> .
<221> CDS
<222> (91)..(1203)
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<400> 42																
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ccaccggggc ggaccgcgga acccgaggcc atg tcc cat gaa aag agt ttt ttg																114
Met Ser His Glu Lys Ser Phe Leu																
1 5																
gtg tct ggg gac aac tat cct ccc ccc aac cct gga tat ccg ggg ggg																162
Val Ser Gly Asp Asn Tyr Pro Pro Pro Asn Pro Gly Tyr Pro Gly Gly																
10 15 20																
ccc cag cca ccc atg ccc ccc tat gct cag cct ccc tac cct ggg gcc																210
Pro Gln Pro Pro Met Pro Pro Tyr Ala Gln Pro Pro Tyr Pro Gly Ala																
25 30 35 40																
cct tac cca cag ccc cct ttc cag ccc tcc ccc tac ggt cag cca ggg																258
Pro Tyr Pro Gln Pro Pro Phe Gln Pro Ser Pro Tyr Gly Gln Pro Gly																
45 50 55																
tac ccc cat ggc ccc agc ccc tac ccc caa ggg ggc tac cca cag ggt																306
Tyr Pro His Gly Pro Ser Pro Tyr Pro Gln Gly Gly Tyr Pro Gln Gly																
60 65 70																
ccc tac ccc caa ggg ggc tac cca cag ggc ccc tac cca caa gag ggc																354
Pro Tyr Pro Gln Gly Gly Tyr Pro Gln Gly Pro Tyr Pro Gln Glu Gly																
75 80 85																
tac cca cag ggc ccc tac ccc caa ggg ggc tac ccc cag ggg cca tat																402
Tyr Pro Gln Gly Pro Tyr Pro Gln Gly Gly Tyr Pro Gln Gly Pro Tyr																
90 95 100																
ccc cag agc ccc ttc ccc ccc aac ccc tat gga cag cca cag gtc ttc																450
Pro Gln Ser Pro Phe Pro Pro Asn Pro Tyr Gly Gln Pro Gln Val Phe																

105	110	115	120	
cca gga caa gac cct gac tca ccc cag cat gga aac tac cag gag gag	Pro Gly Gln Asp	Pro Asp Ser Pro Gln His Gly Asn Tyr Gln Glu Glu	498	
	125	130	135	
ggt ccc cca tcc tac tat gac aac cag gac ttc cct gcc acc aac tgg	Gly Pro Pro Ser Tyr Tyr Asp Asn Gln Asp Phe Pro Ala Thr Asn Trp	546		
	140	145	150	
gat gac aag agc atc cga cag gcc ttc atc cgc aag gtg ttc cta gtg	Asp Asp Lys Ser Ile Arg Gln Ala Phe Ile Arg Lys Val Phe Leu Val	594		
	155	160	165	
ctg acc ttg cag ctg tcg gtg acc ctg tcc acg gtg tct gtg ttc act	Leu Thr Leu Gln Leu Ser Val Thr Leu Ser Thr Val Ser Val Phe Thr	642		
	170	175	180	
ttt gtt gcg gag gtg aag ggc ttt gtc cgg gag aat gtc tgg acc tac	Phe Val Ala Glu Val Lys Gly Phe Val Arg Glu Asn Val Trp Thr Tyr	690		
	185	190	195	200
tat gtc tcc tat gct gtc ttc ttc atc tct ctc atc gtc ctc agc tgt	Tyr Val Ser Tyr Ala Val Phe Phe Ile Ser Leu Ile Val Leu Ser Cys	738		
	205	210	215	
tgt ggg gac ttc cgg cga aag cac ccc tgg aac ctt gtt gca ctg tcg	Cys Gly Asp Phe Arg Arg Lys His Pro Trp Asn Leu Val Ala Leu Ser	786		
	220	225	230	
gtc ctg acc gcc agc ctg tcg tac atg gtg ggg atg atc gcc agc ttc	Val Leu Thr Ala Ser Leu Ser Tyr Met Val Gly Met Ile Ala Ser Phe	834		
	235	240	245	
tac aac acc gag gca gtc atc atg gcc gtg ggc atc acc aca gcc gtc	Tyr Asn Thr Glu Ala Val Ile Met Ala Val Gly Ile Thr Thr Ala Val	882		
	250	255	260	
tgc ttc acc gtc gtc atc ttc tcc atg cag acc cgc tac gac ttc acc	Cys Phe Thr Val Val Ile Phe Ser Met Gln Thr Arg Tyr Asp Phe Thr	930		
	265	270	275	280
tca tgc atg ggc gtg ctc ctg gtg agc atg gtg gtg ctc ttc atc ttc	Ser Cys Met Gly Val Leu Leu Val Ser Met Val Val Leu Phe Ile Phe	978		
	285	290	295	
gcc att ctc tgc atc ttc atc cgg aac cgc atc ctg gag atc gtg tac	Ala Ile Leu Cys Ile Phe Ile Arg Asn Arg Ile Leu Glu Ile Val Tyr	1026		
	300	305	310	
gcc tca ctg ggc gct ctg ctc ttc acc tgc ttc ctc gca gtg gac acc	Ala Ser Leu Gly Ala Leu Leu Phe Thr Cys Phe Leu Ala Val Asp Thr	1074		
	315	320	325	
cag ctg ctg ctg ggg aac aag cag ctg tcc ctg agc cca gaa gag tat	Gln Leu Leu Leu Gly Asn Lys Gln Leu Ser Leu Ser Pro Glu Glu Tyr	1122		
	330	335	340	

gtg ttt gct gcg ctg aac ctg tac aca gac atc atc aac atc ttc ctg 1170
Val Phe Ala Ala Leu Asn Leu Tyr Thr Asp Ile Ile Asn Ile Phe Leu
345 350 355 360

tac atc ctc acc atc att ggc cgc gcc aag gag tagccgagct ccagctcgct 1223
Tyr Ile Leu Thr Ile Ile Gly Arg Ala Lys Glu
365 370

gtgcccgcctc aggtggcacg gctggcctgg accctgcccc tggcacggca gtgccagctg 1283
tacttcccct ctctcttgct cccaggcaca gcctagggaa aaggatgcct ctctccaacc 1343
ctcctgtatg tacactgcag atacttccat ttggaccgcg tgtggccaca gcatggcccc 1403
tttagtcctc ccgccccgcg caagggggcag caaggccacg tttccgtgcc acctcctgtc 1463
tactcattgt tgcattgagc ctgtctgcca gccaccccca gggactgggg gcagaccag 1523
gtcccgggga gagggattga gccaaagagt gaggggtgcac gtcttcctc ctgtcccagc 1583
tccccagcct ggcgtagagc accctcccc tccccccac cccctggag tgctgccctc 1643
tggggacatg cggagtgggg gtcttatccc tgtgctgagc cctgagggca gagaggatgg 1703
catgtttcag gggaggggga agccttcctc tcaatttggt gtcagtga aa ttccaataaa 1763
tgggatttgc tctctgcc 1781

<210> 43
<211> 393
<212> PRT
<213> Homo sapiens

<400> 43
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Ser Ser Pro Pro Pro Lys Thr Glu Ala Ala Ser Asp Pro Gln His Pro
20 25 30
Ala Ala Ser Glu Gly Ala Ala Ala Ala Ala Ser Pro Pro Leu Leu
35 40 45
Arg Cys Leu Val Leu Thr Gly Phe Gly Gly Tyr Asp Lys Val Lys Leu
50 55 60
Gln Ser Arg Pro Ala Ala Pro Pro Ala Pro Gly Pro Gly Gln Leu Thr
65 70 75 80
Leu Arg Leu Arg Ala Cys Gly Leu Asn Phe Ala Asp Leu Met Ala Arg
85 90 95
Gln Gly Leu Tyr Asp Arg Leu Pro Pro Leu Pro Val Thr Pro Gly Met
100 105 110

Glu Gly Ala Gly Val Val Ile Ala Val Gly Glu Gly Val Ser Asp Arg 115 120 125	Lys Ala Gly Asp Arg Val Met Val Leu Asn Arg Ser Gly Met Trp Gln 130 135 140	Glu Glu Val Thr Val Pro Ser Val Gln Thr Phe Leu Ile Pro Glu Ala 145 150 155	Met Thr Phe Glu Glu Ala Ala Ala Leu Leu Val Asn Tyr Ile Thr Ala 165 170 175	Tyr Met Val Leu Phe Asp Phe Gly Asn Leu Gln Pro Gly His Ser Val 180 185 190	Leu Val His Met Ala Ala Gly Gly Val Gly Met Ala Ala Val Gln Leu 195 200 205	Cys Arg Thr Val Glu Asn Val Thr Val Phe Gly Thr Ala Ser Ala Ser 210 215 220	Lys His Glu Ala Leu Lys Glu Asn Gly Val Thr His Pro Ile Asp Tyr 225 230 235	His Thr Thr Asp Tyr Val Asp Glu Ile Lys Lys Ile Ser Pro Lys Gly 245 250 255	Val Asp Ile Val Met Asp Pro Leu Gly Gly Ser Asp Thr Ala Lys Gly 260 265 270	Tyr Asn Leu Leu Lys Pro Met Gly Lys Val Val Thr Tyr Gly Met Ala 275 280 285	Asn Leu Leu Thr Gly Pro Lys Arg Asn Leu Met Ala Leu Ala Arg Thr 290 295 300	Trp Trp Asn Gln Phe Ser Val Thr Ala Leu Gln Leu Leu Gln Ala Asn 305 310 315	Arg Ala Val Cys Gly Phe His Leu Gly Tyr Leu Asp Gly Glu Val Glu 325 330 335	Leu Val Ser Gly Val Val Ala Arg Leu Leu Ala Leu Tyr Asn Gln Gly 340 345 350	His Ile Lys Pro His Ile Asp Ser Val Trp Pro Phe Glu Lys Val Ala 355 360 365	Asp Ala Met Lys Gln Met Gln Glu Lys Lys Asn Val Gly Lys Val Leu 370 375 380	Leu Val Pro Gly Pro Glu Lys Glu Asn 385 390
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$\langle 210 \rangle$	44
$\langle 211 \rangle$	2396

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (50)..(1228)

<400> 44

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Glu Arg Glu Val Ala Glu Ala Ala Thr Gly Glu Asp Ala Ser Ser Pro
5 10 15

cct ccg aaa acc gag gca gcg agc gac ccc cag cat ccc gcg gcc tcc 154
Pro Pro Lys Thr Glu Ala Ala Ser Asp Pro Gln His Pro Ala Ala Ser
20 25 30 35

gaa ggg gcc gcc gcc gcc gcc gcc tcc ccg cca ctg ctg cgc tgc cta 202
Glu Gly Ala Ala Ala Ala Ala Ala Ser Pro Pro Leu Leu Arg Cys Leu
40 45 50

gtg ctc acc ggc ttt gga ggc tac gac aag gtg aag ctg cag agc ccg 250
Val Leu Thr Gly Phe Gly Gly Tyr Asp Lys Val Lys Leu Gln Ser Arg
55 60 65

ccg gca gcg ccc ccg gcc cct ggg ccc ggc cag ctg acg ctg cgt ctg 298
Pro Ala Ala Pro Pro Ala Pro Gly Pro Gly Gln Leu Thr Leu Arg Leu
70 75 80

cgg gcc tgc ggg ctc aac ttc gca gac ctc atg gct agg cag ggg ctg 346
Arg Ala Cys Gly Leu Asn Phe Ala Asp Leu Met Ala Arg Gln Gly Leu
85 90 95

tac gac cgt ctc ccg cct ctg cct gtc act ccg ggc atg gag ggc gcg 394
Tyr Asp Arg Leu Pro Pro Leu Pro Val Thr Pro Gly Met Glu Gly Ala
100 105 110 115

ggt gtt gtg atc gca gtg ggc gag gga gtc agc gac cgc aag gca gga 442
Gly Val Val Ile Ala Val Gly Glu Gly Val Ser Asp Arg Lys Ala Gly
120 125 130

gac ccg gtg atg gtg ttg aac ccg tca ggg atg tgg cag gaa gag gtg 490
Asp Arg Val Met Val Leu Asn Arg Ser Gly Met Trp Gln Glu Glu Val
135 140 145

act gtg ccc tcg gtc cag acc ttc ctg att cct gag gcc atg acc ttt 538
Thr Val Pro Ser Val Gln Thr Phe Leu Ile Pro Glu Ala Met Thr Phe
150 155 160

gag gaa gct gct gcc ttg ctc gtc aat tac att aca gcc tac atg gtc 586
Glu Glu Ala Ala Ala Leu Leu Val Asn Tyr Ile Thr Ala Tyr Met Val
165 170 175

ctc ttt gac ttc ggc aac cta cag cct ggc cac agc gtc ttg gta cac 634

Leu Phe Asp Phe Gly Asn Leu Gln Pro Gly His Ser Val Leu Val His
 180 185 190 195
 atg gct gca ggg ggt gtg ggt atg gct gcc gtg cag ctg tgc cgt aca 682
 Met Ala Ala Gly Gly Val Gly Met Ala Ala Val Gln Leu Cys Arg Thr
 200 205 210
 gtg gag aat gtg aca gtg ttc gga acg gcc tcg gcc agc aag cac gag 730
 Val Glu Asn Val Thr Val Phe Gly Thr Ala Ser Ala Ser Lys His Glu
 215 220 225
 gca ctg aag gag aat ggg gtc aca cat ccc atc gac tat cac acg act 778
 Ala Leu Lys Glu Asn Gly Val Thr His Pro Ile Asp Tyr His Thr Thr
 230 235 240
 gac tac gtg gat gag atc aag aag att tcc cct aaa gga gtg gac att 826
 Asp Tyr Val Asp Glu Ile Lys Lys Ile Ser Pro Lys Gly Val Asp Ile
 245 250 255
 gtc atg gac cct ctg ggt ggg tca gat act gcc aag ggc tac aac ctc 874
 Val Met Asp Pro Leu Gly Gly Ser Asp Thr Ala Lys Gly Tyr Asn Leu
 260 265 270 275
 ctg aaa ccc atg ggc aaa gtc gtc acc tat gga atg gcc aac ctg ctg 922
 Leu Lys Pro Met Gly Lys Val Val Thr Tyr Gly Met Ala Asn Leu Leu
 280 285 290
 acg ggc ccc aaa cgg aac ctg atg gcc ctg gcc cgg aca tgg tgg aat 970
 Thr Gly Pro Lys Arg Asn Leu Met Ala Leu Ala Arg Thr Trp Trp Asn
 295 300 305
 cag ttc agc gtg aca gct ctg cag ctg ctg cag gcc aac cgg gct gtg 1018
 Gln Phe Ser Val Thr Ala Leu Gln Leu Leu Gln Ala Asn Arg Ala Val
 310 315 320
 tgt ggc ttc cac ctg ggc tac ctg gat ggt gag gtg gag ctg gtc agt 1066
 Cys Gly Phe His Leu Gly Tyr Leu Asp Gly Glu Val Glu Leu Val Ser
 325 330 335
 ggt gtg gtg gcc cgc ctc ctg gct ctg tac aac cag ggc cac atc aag 1114
 Gly Val Val Ala Arg Leu Leu Ala Leu Tyr Asn Gln Gly His Ile Lys
 340 345 350 355
 ccc cac att gac tca gtc tgg ccc ttc gag aag gtg gct gat gcc atg 1162
 Pro His Ile Asp Ser Val Trp Pro Phe Glu Lys Val Ala Asp Ala Met
 360 365 370
 aaa cag atg cag gag aag aag aat gtg ggc aag gtc ctc ctg gtt cca 1210
 Lys Gln Met Gln Glu Lys Lys Asn Val Gly Lys Val Leu Leu Val Pro
 375 380 385
 ggg cca gag aag gag aac tagggcaagt ggctgtgaga ccctagagac 1258
 Gly Pro Glu Lys Glu Asn
 390
 cagcgaagggaagaagttgggaagctacggtctgttgcca ccagacttgc atttcagcct 1318

ctgtcataat gctctgccct cctcccccg aagttctctg tggatgatgac cgctctcccc 1378
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 tttacatggg tggggagatg gagcaggga gtacagagtg ggatgggtcag gacctgggcc 2158
 attgcaacca aaatggggac ttcttgggta gggagggtcac tccctctact cactgagcta 2218
 ggattagga gggttattgc cccaaccatt gcaatgggag gtggagggac aggcctcagcc 2278
 tctcattgt ctaaagtagg cctaaatgtg tgaagtgcga tttctgcttt tgtgtacccc 2338
 accaccccat taccacagct gcctttgtgt gtttgtgtca ataaaaagcc aaaccctg 2396

<210> 45
 <211> 393
 <212> PRT
 <213> Homo sapiens

<400> 45
 Met Ser Asp Glu Arg Glu Val Ala Glu Ala Ala Thr Gly Glu Asp Ala
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 Ser Ser Pro Pro Pro Lys Thr Glu Ala Ala Ser Asp Pro Gln His Pro
 20 25 30
 Ala Ala Ser Glu Gly Ala Ala Ala Ala Ala Ser Pro Pro Leu Leu
 35 40 45
 Arg Cys Leu Val Leu Thr Gly Phe Gly Gly Tyr Asp Lys Val Lys Leu
 50 55 60
 Gln Ser Arg Pro Ala Ala Pro Pro Ala Pro Gly Pro Gly Gln Leu Thr
 65 70 75 80

Leu Arg Leu Arg Ala Cys Gly Leu Asn Phe Ala Asp Leu Met Ala Arg
 85 90 95

Gln Gly Leu Tyr Asp Arg Leu Pro Pro Leu Pro Val Thr Pro Gly Met
 100 105 110

Glu Gly Ala Gly Val Val Ile Ala Val Gly Glu Gly Val Ser Asp Arg
 115 120 125

Lys Ala Gly Asp Arg Val Met Val Leu Asn Arg Ser Gly Met Trp Gln
 130 135 140

Glu Glu Val Thr Val Pro Ser Val Gln Thr Phe Leu Ile Pro Glu Ala
 145 150 155 160

Met Thr Phe Glu Glu Ala Ala Ala Leu Leu Val Asn Tyr Ile Thr Ala
 165 170 175

Tyr Met Val Leu Phe Asp Phe Gly Asn Leu Gln Pro Gly His Ser Val
 180 185 190

Leu Val His Met Ala Ala Gly Gly Val Gly Met Ala Ala Val Gln Leu
 195 200 205

Cys Arg Thr Val Glu Asn Val Thr Val Phe Gly Thr Ala Ser Ala Ser
 210 215 220

Lys His Glu Ala Leu Lys Glu Asn Gly Val Thr His Pro Ile Asp Tyr
 225 230 235 240

His Thr Thr Asp Tyr Val Asp Glu Ile Lys Lys Ile Ser Pro Lys Gly
 245 250 255

Val Asp Ile Val Met Asp Pro Leu Gly Gly Ser Asp Thr Ala Lys Gly
 260 265 270

Tyr Asn Leu Leu Lys Pro Met Gly Lys Val Val Thr Tyr Gly Met Ala
 275 280 285

Asn Leu Leu Thr Gly Pro Lys Arg Asn Leu Met Ala Leu Ala Arg Thr
 290 295 300

Trp Trp Asn Gln Phe Ser Val Thr Ala Leu Gln Leu Leu Gln Ala Asn
 305 310 315 320

Arg Ala Val Cys Gly Phe His Leu Gly Tyr Leu Asp Gly Glu Val Glu
 325 330 335

Leu Val Ser Gly Val Val Ala Arg Leu Leu Ala Leu Tyr Asn Gln Gly
 340 345 350

His Ile Lys Pro His Ile Asp Ser Val Trp Pro Phe Glu Lys Val Ala
 355 360 365

Asp Ala Met Lys Gln Met Gln Glu Lys Lys Asn Val Gly Lys Val Leu
 370 375 380

Leu Val Pro Gly Pro Glu Lys Gln Asn
385 390

<210> 46
<211> 2396
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (50)..(1228)

<400> 46
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Met Ser Asp
1

gag aga gag gta gcc gag gca gcg acc ggg gaa gac gcc tct tcg ccg 106
Glu Arg Glu Val Ala Glu Ala Ala Thr Gly Glu Asp Ala Ser Ser Pro
5 10 15

cct ccg aaa acc gag gca gcg agc gac ccc cag cat ccc gcg gcc tcc 154
Pro Pro Lys Thr Glu Ala Ala Ser Asp Pro Gln His Pro Ala Ala Ser
20 25 30 35

gaa ggg gcc gcc gcc gcc gcc gcc tgc ccg cca ctg ctg cgc tgc cta 202
Glu Gly Ala Ala Ala Ala Ala Ala Ser Pro Pro Leu Leu Arg Cys Leu
40 45 50

gtg ctc acc ggc ttt gga ggc tac gac aag gtg aag ctg cag agc cgg 250
Val Leu Thr Gly Phe Gly Gly Tyr Asp Lys Val Lys Leu Gln Ser Arg
55 60 65

ccg gca gcg ccc ccg gcc cct ggg ccc ggc cag ctg acg ctg cgt ctg 298
Pro Ala Ala Pro Pro Ala Pro Gly Pro Gly Gln Leu Thr Leu Arg Leu
70 75 80

cgg gcc tgc ggg ctc aac ttc gca gac ctc atg gct agg cag ggg ctg 346
Arg Ala Cys Gly Leu Asn Phe Ala Asp Leu Met Ala Arg Gln Gly Leu
85 90 95

tac gac cgt ctc ccg cct ctg cct gtc act ccg ggc atg gag ggc gcg 394
Tyr Asp Arg Leu Pro Pro Leu Pro Val Thr Pro Gly Met Glu Gly Ala
100 105 110 115

ggt gtt gtg atc gca gtg ggc gag gga gtc agc gac cgc aag gca gga 442
Gly Val Val Ile Ala Val Gly Glu Gly Val Ser Asp Arg Lys Ala Gly
120 125 130

gac cgg gtg atg gtg ttg aac cgg tca ggg atg tgg cag gaa gag gtg 490
Asp Arg Val Met Val Leu Asn Arg Ser Gly Met Trp Gln Glu Glu Val
135 140 145

act gtg ccc tcg gtc cag acc ttc ctg att cct gag gcc atg acc ttt 538
Thr Val Pro Ser Val Gln Thr Phe Leu Ile Pro Glu Ala Met Thr Phe

150										155										160										
gag	gaa	gct	gct	gcc	ttg	ctc	gtc	aat	tac	att	aca	gcc	tac	atg	gtc	586														
Glu	Glu	Ala	Ala	Ala	Leu	Leu	Val	Asn	Tyr	Ile	Thr	Ala	Tyr	Met	Val															
165					170					175																				
ctc	ttt	gac	ttc	ggc	aac	cta	cag	cct	ggc	cac	agc	gtc	ttg	gta	cac	634														
Leu	Phe	Asp	Phe	Gly	Asn	Leu	Gln	Pro	Gly	His	Ser	Val	Leu	Val	His															
180		185					190					195																		
atg	gct	gca	ggg	ggt	gtg	ggt	atg	gct	gcc	gtg	cag	ctg	tgc	cgt	aca	682														
Met	Ala	Ala	Gly	Gly	Val	Gly	Met	Ala	Ala	Val	Gln	Leu	Cys	Arg	Thr															
200					205					210																				
gtg	gag	aat	gtg	aca	gtg	ttc	gga	acg	gcc	tcg	gcc	agc	aag	cac	gag	730														
Val	Glu	Asn	Val	Thr	Val	Phe	Gly	Thr	Ala	Ser	Ala	Ser	Lys	His	Glu															
215				220				225																						
gca	ctg	aag	gag	aat	ggg	gtc	aca	cat	ccc	atc	gac	tat	cac	acg	act	778														
Ala	Leu	Lys	Glu	Asn	Gly	Val	Thr	His	Pro	Ile	Asp	Tyr	His	Thr	Thr															
230			235				240																							
gac	tac	gtg	gat	gag	atc	aag	aag	att	tcc	cct	aaa	gga	gtg	gac	att	826														
Asp	Tyr	Val	Asp	Glu	Ile	Lys	Lys	Ile	Ser	Pro	Lys	Gly	Val	Asp	Ile															
245		250					255																							
gtc	atg	gac	cct	ctg	ggt	ggg	tca	gat	act	gcc	aag	ggc	tac	aac	ctc	874														
Val	Met	Asp	Pro	Leu	Gly	Gly	Ser	Asp	Thr	Ala	Lys	Gly	Tyr	Asn	Leu															
260		265				270				275																				
ctg	aaa	ccc	atg	ggc	aaa	gtc	gtc	acc	tat	gga	atg	gcc	aac	ctg	ctg	922														
Leu	Lys	Pro	Met	Gly	Lys	Val	Val	Thr	Tyr	Gly	Met	Ala	Asn	Leu	Leu															
280				285				290																						
acg	ggc	ccc	aaa	cgg	aac	ctg	atg	gcc	ctg	gcc	cgg	aca	tgg	tgg	aat	970														
Thr	Gly	Pro	Lys	Arg	Asn	Leu	Met	Ala	Leu	Ala	Arg	Thr	Trp	Trp	Asn															
295			300				305																							
cag	ttc	agc	gtg	aca	gct	ctg	cag	ctg	ctg	cag	gcc	aac	cgg	gct	gtg	1018														
Gln	Phe	Ser	Val	Thr	Ala	Leu	Gln	Leu	Leu	Gln	Ala	Asn	Arg	Ala	Val															
310			315				320																							
tgt	ggc	ttc	cac	ctg	ggc	tac	ctg	gat	ggt	gag	gtg	gag	ctg	gtc	agt	1066														
Cys	Gly	Phe	His	Leu	Gly	Tyr	Leu	Asp	Gly	Glu	Val	Glu	Leu	Val	Ser															
325		330				335																								
ggt	gtg	gtg	gcc	cgc	ctc	ctg	gct	ctg	tac	aac	cag	ggc	cac	atc	aag	1114														
Gly	Val	Val	Ala	Arg	Leu	Leu	Ala	Leu	Tyr	Asn	Gln	Gly	His	Ile	Lys															
340		345				350				355																				
ccc	cac	att	gac	tca	gtc	tgg	ccc	ttc	gag	aag	gtg	gct	gat	gcc	atg	1162														
Pro	His	Ile	Asp	Ser	Val	Trp	Pro	Phe	Glu	Lys	Val	Ala	Asp	Ala	Met															
360				365				370																						
aaa	cag	atg	cag	gag	aag	aag	aat	gtg	ggc	aag	gtc	ctc	ctg	gtt	cca	1210														
Lys	Gln	Met	Gln	Glu	Lys	Lys	Asn	Val	Gly	Lys	Val	Leu	Leu	Val	Pro															
375			380				385																							

ggg cca gag aag cag aac tagggcaagt ggctgtgaga ccctagagac 1258
Gly Pro Glu Lys Gln Asn
390

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cttctcagc cttgcagata tgtgtggcat ttactagcca gagctctgaa aggcagtgtc 1978
gtctgtttct tgtactggga ccaaagtaaa aatccaagca cattcccctt gcagttaggg 2038
gaggccctac tgccttctca aagcagagag gcagcttctc aaactcagcc caaaactctg 2098
tttcatggtg tggggagatg gagcagggaa gtacagagtg ggatgggtcag gacctgggcc 2158
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ggattaggga gggttattgc cccaaccatt gcaatgggag gtggaggagc aggctcagcc 2278
tctctattgt ctaaagtagg cctaaatgtg tgaagtgcga tttctgcttt tgtgtacccc 2338
accaccccat taccacagct gcctttgtgt gtttgtgtca ataaaaagcc aaaccctg 2396

<210> 47
<211> 138
<212> PRT
<213> Homo sapiens

<400> 47
Met Ile Ser Leu Thr Asp Thr Gln Lys Ile Gly Met Gly Leu Thr Gly
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Phe Gly Val Phe Phe Leu Phe Phe Gly Met Ile Leu Phe Phe Asp Lys
20 25 30
Ala Leu Leu Ala Ile Gly Asn Val Leu Phe Val Ala Gly Leu Ala Phe

35 40 45
Val Ile Gly Leu Glu Arg Thr Phe Arg Phe Phe Phe Gln Lys His Lys
50 55 60
Met Lys Ala Thr Gly Phe Phe Leu Gly Gly Val Phe Val Val Leu Ile
65 70 75 80
Gly Trp Pro Leu Ile Gly Met Ile Phe Glu Ile Tyr Gly Phe Phe Leu
85 90 95
Leu Phe Arg Gly Phe Phe Pro Val Val Val Gly Phe Ile Arg Arg Val
100 105 110
Pro Val Leu Gly Ser Leu Leu Asn Leu Pro Gly Ile Arg Ser Phe Val
115 120 125
Asp Lys Val Gly Glu Ser Asn Asn Met Val
130 135

<210> 48
<211> 2976
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (110)..(523)

<400> 48
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accctgggct ttccgagggtg ctgtgcgcgc tgtcccacc actgcagcc atg atc tcc 118
Met Ile Ser
1

tta acg gac acg cag aaa att gga atg gga tta aca gga ttt gga gtg 166
Leu Thr Asp Thr Gln Lys Ile Gly Met Gly Leu Thr Gly Phe Gly Val
5 10 15

ttt ttc ctg ttc ttt gga atg att ctc ttt ttt gac aaa gca cta ctg 214
Phe Phe Leu Phe Phe Gly Met Ile Leu Phe Phe Asp Lys Ala Leu Leu
20 25 30 35

gct att gga aat gtt tta ttt gta gcc ggc ttg gct ttt gta att ggt 262
Ala Ile Gly Asn Val Leu Phe Val Ala Gly Leu Ala Phe Val Ile Gly
40 45 50

tta gaa aga aca ttc aga ttc ttc ttc caa aaa cat aaa atg aaa gct 310
Leu Glu Arg Thr Phe Arg Phe Phe Phe Gln Lys His Lys Met Lys Ala
55 60 65

aca ggt ttt ttt ctg ggt ggt gta ttt gta gtc ctt att ggt tgg cct 358
Thr Gly Phe Phe Leu Gly Gly Val Phe Val Val Leu Ile Gly Trp Pro
70 75 80

ttg ata ggc atg atc ttc gaa att tat gga ttt ttt ctc ttg ttc agg	406
Leu Ile Gly Met Ile Phe Glu Ile Tyr Gly Phe Phe Leu Leu Phe Arg	
85 90 95	
ggc ttc ttt cct gtc gtt gtt ggc ttt att aga aga gtg cca gtc ctt	454
Gly Phe Phe Pro Val Val Val Gly Phe Ile Arg Arg Val Pro Val Leu	
100 105 110 115	
gga tcc ctc cta aat tta cct gga att aga tca ttt gta gat aaa gtt	502
Gly Ser Leu Leu Asn Leu Pro Gly Ile Arg Ser Phe Val Asp Lys Val	
120 125 130	
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Gly Glu Ser Asn Asn Met Val	
135	
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aaatagcttg taatgttctt tacaggagtt taaaacgtat agcctacaaa gtaccagcag	673
caaattagca aagaagcagt gaaaacaggc ttctactcaa gtgaactaag aagaagtcag	733
caagcaaact gagagaggtg aaatccatgt taatgatgct taagaaactc ttgaaggcta	793
tttgtgttgt ttttccacaa tgtgcgaaac tcagccatcc ttagagaact gtggtgcctg	853
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taaactgact atggtttctt aagaacatga cactaaaaaa aaagtgggtt ttttccaccg	1753
ttgctgatta ttagacagta ggaaatagct gttttcttta gttttacaag atgtgacagc	1813

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 aatctgtggt atttattttac aaacatgtct acaaaaaatag attacagctt attttatttt 1993
 tagttaaatc tcttaataca cagagaactc ccaatcttgc tcatctaaat aaggaaagac 2053
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 aacatactag tctgctgata gaaagcacta tacatcctat tgtttctttc tttccaaaat 2713
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 catagcetta agtgtttctg tcattgttca agtgatattt ctgtaacaga aacatatttg 2833
 gaatgttttt cttttccctt tataaattgt aattcctgaa atactgctgc tttaaaaagt 2893
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 <212> PRT
 <213> Homo sapiens

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 Ser Leu Val Glu Leu Leu Ile Arg Pro Val Gln Arg Leu Pro Ser Val
 35 40 45

Ala Leu Leu Leu Asn Asp Leu Lys Lys His Thr Ala Asp Glu Asn Pro
50 55 60

Asp Lys Ser Thr Leu Glu Lys Ala Ile Gly Ser Leu Lys Glu Val Met
65 70 75 80

Thr His Ile Asn Glu Asp Lys Arg Lys Thr Glu Ala Gln Lys Gln Ile
85 90 95

Phe Asp Val Val Tyr Glu Val Asp Gly Cys Pro Ala Asn Leu Leu Ser
100 105 110

Ser His Arg Ser Leu Val Gln Arg Val Glu Thr Ile Ser Leu Gly Glu
115 120 125

His Pro Cys Asp Arg Gly Glu Gln Val Thr Leu Phe Leu Phe Asn Asp
130 135 140

Cys Leu Glu Ile Ala Arg Lys Arg His Lys Val Ile Gly Thr Phe Arg
145 150 155 160

Ser Pro His Gly Gln Thr Arg Pro Pro Ala Ser Leu Lys His Ile His
165 170 175

Leu Met Pro Leu Ser Gln Ile Lys Lys Val Leu Asp Ile Arg Glu Thr
180 185 190

Glu Asp Cys His Asn Ala Phe Ala Leu Leu Val Arg Pro Pro Thr Glu
195 200 205

Gln Ala Asn Val Leu Leu Ser Phe Gln Met Thr Ser Asp Glu Leu Pro
210 215 220

Lys Glu Asn Trp Leu Lys Met Leu Cys Arg His Val Ala Asn Thr Ile
225 230 235 240

Cys Lys Ala Asp Ala Glu Asn Leu Ile Tyr Thr Ala Asp Pro Glu Ser
245 250 255

Phe Glu Val Asn Thr Lys Asp Met Asp Ser Thr Leu Ser Arg Ala Ser
260 265 270

Arg Ala Ile Lys Lys Thr Ser Lys Lys Val Thr Arg Ala Phe Ser Phe
275 280 285

Ser Lys Thr Pro Lys Arg Ala Leu Arg Arg Ala Leu Met Thr Ser His
290 295 300

Gly Ser Val Glu Gly Arg Ser Pro Ser Ser Asn Asp Lys His Val Met
305 310 315 320

Ser Arg Leu Ser Ser Thr Ser Ser Leu Ala Gly Ile Pro Ser Pro Ser
325 330 335

Leu Val Ser Leu Pro Ser Phe Phe Glu Arg Arg Ser His Thr Leu Ser
340 345 350

Arg Ser Thr Thr His Leu Ile
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atatctttga tgtacacact aagataaagg atgatcttga agaccttata gttaattggg 240
atgagagcaa aagcattggg gacatttttc tgaaatattc aaaagatttg gtaaaaacct 300
accctccctt tgtaaacttc tttgaa atg agc aag gaa aca att att aaa tgt 353
Met Ser Lys Glu Thr Ile Ile Lys Cys
1 5
gaa aaa cag aaa cca aga ttt cat gct ttt ctc aag ata aac caa gca 401
Glu Lys Gln Lys Pro Arg Phe His Ala Phe Leu Lys Ile Asn Gln Ala
10 15 20 25
aaa cca gaa tgt gga cgg cag agc ctt gtt gaa ctt ctt atc cga cca 449
Lys Pro Glu Cys Gly Arg Gln Ser Leu Val Glu Leu Leu Ile Arg Pro
30 35 40
gta cag agg tta ccc agt gtt gca tta ctt tta aat gat ctt aag aag 497
Val Gln Arg Leu Pro Ser Val Ala Leu Leu Leu Asn Asp Leu Lys Lys
45 50 55
cat aca gct gat gaa aat cca gac aaa agc act tta gaa aaa gct att 545
His Thr Ala Asp Glu Asn Pro Asp Lys Ser Thr Leu Glu Lys Ala Ile
60 65 70
gga tca ctg aag gaa gta atg acg cat att aat gag gat aag aga aaa 593
Gly Ser Leu Lys Glu Val Met Thr His Ile Asn Glu Asp Lys Arg Lys
75 80 85
aca gaa gct caa aag caa att ttt gat gtt gtt tat gaa gta gat gga 641
Thr Glu Ala Gln Lys Gln Ile Phe Asp Val Val Tyr Glu Val Asp Gly
90 95 100 105
tgc cca gct aat ctt tta tct tct cac cga agc tta gta cag cgg gtt 689
Cys Pro Ala Asn Leu Leu Ser Ser His Arg Ser Leu Val Gln Arg Val
110 115 120
gaa aca att tct cta ggt gag cac ccc tgt gac aga gga gaa caa gta 737

Glu	Thr	Ile	Ser	Leu	Gly	Glu	His	Pro	Cys	Asp	Arg	Gly	Glu	Gln	Val	
			125					130					135			
act	ctc	ttc	ctc	ttc	aat	gat	tgc	cta	gag	ata	gca	aga	aaa	cgg	cac	785
Thr	Leu	Phe	Leu	Phe	Asn	Asp	Cys	Leu	Glu	Ile	Ala	Arg	Lys	Arg	His	
		140					145					150				
aag	gtt	att	ggc	act	ttt	agg	agt	cct	cat	ggc	caa	acc	cga	ccc	cca	833
Lys	Val	Ile	Gly	Thr	Phe	Arg	Ser	Pro	His	Gly	Gln	Thr	Arg	Pro	Pro	
		155				160					165					
gct	tct	ctt	aag	cat	att	cac	cta	atg	cct	ctt	tct	cag	att	aag	aag	881
Ala	Ser	Leu	Lys	His	Ile	His	Leu	Met	Pro	Leu	Ser	Gln	Ile	Lys	Lys	
170					175					180					185	
gta	ttg	gac	ata	aga	gag	aca	gaa	gat	tgc	cat	aat	gct	ttt	gcc	ttg	929
Val	Leu	Asp	Ile	Arg	Glu	Thr	Glu	Asp	Cys	His	Asn	Ala	Phe	Ala	Leu	
				190				195						200		
ctt	gtg	agg	cca	cca	aca	gag	cag	gca	aat	gtg	cta	ctc	agt	ttc	cag	977
Leu	Val	Arg	Pro	Pro	Thr	Glu	Gln	Ala	Asn	Val	Leu	Leu	Ser	Phe	Gln	
			205					210					215			
atg	aca	tca	gat	gaa	ctt	cca	aaa	gaa	aac	tgg	cta	aag	atg	ctg	tgt	1025
Met	Thr	Ser	Asp	Glu	Leu	Pro	Lys	Glu	Asn	Trp	Leu	Lys	Met	Leu	Cys	
		220					225					230				
cga	cat	gta	gct	aac	acc	att	tgt	aaa	gca	gat	gct	gag	aat	ctt	att	1073
Arg	His	Val	Ala	Asn	Thr	Ile	Cys	Lys	Ala	Asp	Ala	Glu	Asn	Leu	Ile	
		235				240					245					
tat	act	gct	gat	cca	gaa	tcc	ttt	gaa	gta	aat	aca	aaa	gat	atg	gac	1121
Tyr	Thr	Ala	Asp	Pro	Glu	Ser	Phe	Glu	Val	Asn	Thr	Lys	Asp	Met	Asp	
250					255					260					265	
agt	aca	ttg	agt	aga	gca	tca	aga	gca	ata	aaa	aag	act	tca	aaa	aag	1169
Ser	Thr	Leu	Ser	Arg	Ala	Ser	Arg	Ala	Ile	Lys	Lys	Thr	Ser	Lys	Lys	
				270				275						280		
gtt	aca	aga	gca	ttc	tct	ttc	tcc	aaa	act	cca	aaa	aga	gct	ctt	cga	1217
Val	Thr	Arg	Ala	Phe	Ser	Phe	Ser	Lys	Thr	Pro	Lys	Arg	Ala	Leu	Arg	
			285					290					295			
agg	gct	ctt	atg	aca	tcc	cac	ggc	tca	gtg	gag	gga	aga	agt	cct	tcc	1265
Arg	Ala	Leu	Met	Thr	Ser	His	Gly	Ser	Val	Glu	Gly	Arg	Ser	Pro	Ser	
		300					305					310				
agc	aat	gat	aag	cat	gta	atg	agt	cgt	ctt	tct	agc	aca	tca	tca	tta	1313
Ser	Asn	Asp	Lys	His	Val	Met	Ser	Arg	Leu	Ser	Ser	Thr	Ser	Ser	Leu	
		315				320					325					
gca	ggg	atc	cct	tct	ccc	tcc	ctt	gtc								

350

355

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cactaaacta tgctatttga tttttcttct tgaaagagta aggtttacct gttacatttt 1583
caagttaatt catgtaaaaa atgatagtga ttttgatgta atttatctct tgtttgaatc 1643
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Asn Leu Leu Ile Gly Ser Thr Ser Tyr Val Glu Glu Glu Met Pro Gln
 35 40 45
 Ile Glu Thr Arg Val Ile Leu Val Gln Glu Ala Gly Lys Gln Glu Glu
 50 55 60
 Leu Thr Lys Ala Leu Lys Asp Ile Lys Val Gly Phe Val Lys Met Glu
 65 70 75 80
 Ser Val Glu Glu Phe Glu Gly Leu Asp Ser Pro Glu Phe Glu Asn Val
 85 90 95
 Phe Val Val Thr Asp Phe Gln Asp Ser Val Phe Asn Asp Leu Tyr Lys
 100 105 110
 Ala Asp Cys Arg Val Ile Gly Pro Pro Val Val Leu Asn Cys Ser Gln
 115 120 125
 Lys Gly Glu Pro Leu Pro Phe Ser Cys Arg Pro Leu Tyr Cys Thr Ser
 130 135 140
 Met Met Asn Leu Val Leu Cys Phe Thr Gly Phe Arg Lys Lys Glu Glu
 145 150 155 160
 Leu Val Arg Leu Val Thr Leu Val His His Met Gly Gly Val Ile Arg
 165 170 175
 Lys Asp Phe Asn Ser Lys Val Thr His Leu Val Ala Asn Cys Thr Gln
 180 185 190
 Gly Glu Lys Phe Arg Val Ala Val Ser Leu Gly Thr Pro Ile Met Lys
 195 200 205
 Pro Glu Trp Ile Tyr Lys Ala Trp Glu Arg Arg Asn Glu Gln Asp Phe
 210 215 220
 Tyr Ala Ala Val Asp Asp Phe Arg Asn Glu Phe Lys Val Pro Pro Phe
 225 230 235 240
 Gln Asp Cys Ile Phe Ser Phe Leu Gly Phe Ser Asp Glu Glu Lys Thr
 245 250 255
 Asn Met Glu Glu Met Thr Glu Met Gln Gly Gly Lys Tyr Leu Pro Leu
 260 265 270
 Gly Asp Glu Arg Cys Thr His Leu Val Val Glu Glu Asn Ile Val Lys
 275 280 285
 Asp Leu Pro Phe Glu Pro Ser Lys Lys Leu Tyr Val Val Lys Gln Glu
 290 295 300
 Trp Phe Trp Gly Ser Ile Gln Met Asp Ala Arg Ala Gly Glu Thr Met
 305 310 315 320
 Tyr Leu Tyr Glu Lys Ala Asn Thr Pro Glu Leu Lys Lys Ser Val Ser
 325 330 335

Met Leu Ser Leu Asn Thr Pro Asn Ser Asn Arg Lys Arg Arg Arg Leu
340 345 350

Lys Glu Thr Leu Ala Gln Leu Ser Arg Asp Thr Asp Val Ser Pro Phe
355 360 365

Pro Pro Arg Lys Arg Pro Ser Ala Glu His Ser Leu Ser Ile Gly Ser
370 375 380

Leu Leu Asp Ile Ser Asn Thr Pro Glu Ser Ser Ile Asn Tyr Gly Asp
385 390 395 400

Thr Pro Lys Ser Cys Thr Lys Ser Ser Lys Ser Ser Thr Pro Val Pro
405 410 415

Ser Lys Gln Ser Ala Arg Trp Gln Val Ala Lys Glu Leu Tyr Gln Thr
420 425 430

Glu Ser Asn Tyr Val Asn Ile Leu Ala Thr Ile Ile Gln Leu Phe Gln
435 440 445

Val Pro Leu Glu Glu Glu Gly Gln Arg Gly Gly Pro Ile Leu Ala Pro
450 455 460

Glu Glu Ile Lys Thr Ile Phe Gly Ser Ile Pro Asp Ile Phe Asp Val
465 470 475 480

His Thr Lys Ile Lys Asp Asp Leu Glu Asp Leu Ile Val Asn Trp Asp
485 490 495

Glu Ser Lys Ser Ile Gly Asp Ile Phe Leu Lys Tyr Ser Lys Asp Leu
500 505 510

Val Lys Thr Tyr Pro Pro Phe Val Asn Phe Phe Glu Met Ser Lys Glu
515 520 525

Thr Ile Ile Lys Cys Glu Lys Gln Lys Pro Arg Phe His Ala Phe Leu
530 535 540

Lys Ile Asn Gln Ala Lys Pro Glu Cys Gly Arg Gln Ser Leu Val Glu
545 550 555 560

Leu Leu Ile Arg Pro Val Gln Arg Leu Pro Ser Val Ala Leu Leu Leu
565 570 575

Asn Asp Leu Lys Lys His Thr Ala Asp Glu Asn Pro Asp Lys Ser Thr
580 585 590

Leu Glu Lys Ala Ile Gly Ser Leu Lys Glu Val Met Thr His Ile Asn
595 600 605

Glu Asp Lys Arg Lys Thr Glu Ala Gln Lys Gln Ile Phe Asp Val Val
610 615 620

Tyr Glu Val Asp Gly Cys Pro Ala Asn Leu Leu Ser Ser His Arg Ser
625 630 635 640

Leu	Val	Gln	Arg	Val	Glu	Thr	Ile	Ser	Leu	Gly	Glu	His	Pro	Cys	Asp		
				645					650							655	
Arg	Gly	Glu	Gln	Val	Thr	Leu	Phe	Leu	Phe	Asn	Asp	Cys	Leu	Glu	Ile		
				660					665							670	
Ala	Arg	Lys	Arg	His	Lys	Val	Ile	Gly	Thr	Phe	Arg	Ser	Pro	His	Gly		
				675					680							685	
Gln	Thr	Arg	Pro	Pro	Ala	Ser	Leu	Lys	His	Ile	His	Leu	Met	Pro	Leu		
				690					695							700	
Ser	Gln	Ile	Lys	Lys	Val	Leu	Asp	Ile	Arg	Glu	Thr	Glu	Asp	Cys	His		
705					710					715							720
Asn	Ala	Phe	Ala	Leu	Leu	Val	Arg	Pro	Pro	Thr	Glu	Gln	Ala	Asn	Val		
				725					730							735	
Leu	Leu	Ser	Phe	Gln	Met	Thr	Ser	Asp	Glu	Leu	Pro	Lys	Glu	Asn	Trp		
				740					745							750	
Leu	Lys	Met	Leu	Cys	Arg	His	Val	Ala	Asn	Thr	Ile	Cys	Lys	Ala	Asp		
				755					760							765	
Ala	Glu	Asn	Leu	Ile	Tyr	Thr	Ala	Asp	Pro	Glu	Ser	Phe	Glu	Val	Asn		
				770					775							780	
Thr	Lys	Asp	Met	Asp	Ser	Thr	Leu	Ser	Arg	Ala	Ser	Arg	Ala	Ile	Lys		
785					790					795							800
Lys	Thr	Ser	Lys	Lys	Val	Thr	Arg	Ala	Phe	Ser	Phe	Ser	Lys	Thr	Pro		
				805					810							815	
Lys	Arg	Ala	Leu	Arg	Arg	Ala	Leu	Met	Thr	Ser	His	Gly	Ser	Val	Glu		
				820					825							830	
Gly	Arg	Ser	Pro	Ser	Ser	Asn	Asp	Lys	His	Val	Met	Ser	Arg	Leu	Ser		
				835					840							845	
Ser	Thr	Ser	Ser	Leu	Ala	Gly	Ile	Pro	Ser	Pro	Ser	Leu	Val	Ser	Leu		
				850					855							860	
Pro	Ser	Phe	Phe	Glu	Arg	Arg	Ser	His	Thr	Leu	Ser	Arg	Ser	Thr	Thr		
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His	Leu	Ile															

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<212> DNA
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<222> (29) .. (2677)
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Ser Thr Thr Gly Arg Thr Ser Leu Ala Asp Ser Ser Ile Phe Asp Ser
10 15 20

aaa gtt act gag att tcc aag gaa aac tta ctt att gga tct act tca 148
Lys Val Thr Glu Ile Ser Lys Glu Asn Leu Leu Ile Gly Ser Thr Ser
25 30 35 40

tat gta gaa gaa gag atg cct cag att gaa aca aga gtg ata ttg gtt 196
Tyr Val Glu Glu Met Pro Gln Ile Glu Thr Arg Val Ile Leu Val
45 50 55

caa gaa gct gga aaa caa gaa gaa ctt aca aaa gcc tta aag gac att 244
Gln Glu Ala Gly Lys Gln Glu Glu Leu Thr Lys Ala Leu Lys Asp Ile
60 65 70

aaa gtg ggc ttt gta aag atg gag tca gtg gaa gaa ttt gaa ggt ttg 292
Lys Val Gly Phe Val Lys Met Glu Ser Val Glu Glu Phe Glu Gly Leu
75 80 85

gat tct ccg gaa ttt gaa aat gta ttt gta gtc acg gac ttt cag gat 340
Asp Ser Pro Glu Phe Glu Asn Val Phe Val Val Thr Asp Phe Gln Asp
90 95 100

tct gtc ttt aat gac ctc tac aag gct gat tgt aga gtt att gga cca 388
Ser Val Phe Asn Asp Leu Tyr Lys Ala Asp Cys Arg Val Ile Gly Pro
105 110 115 120

cca gtt gta tta aat tgt tca caa aaa gga gag cct ttg cca ttt tca 436
Pro Val Val Leu Asn Cys Ser Gln Lys Gly Glu Pro Leu Pro Phe Ser
125 130 135

tgt cgc ccg ttg tat tgt aca agt atg atg aat cta gta cta tgc ttt 484
Cys Arg Pro Leu Tyr Cys Thr Ser Met Met Asn Leu Val Leu Cys Phe
140 145 150

act gga ttt agg aaa aaa gaa gaa cta gtc agg ttg gtg aca ttg gtc 532
Thr Gly Phe Arg Lys Lys Glu Glu Leu Val Arg Leu Val Thr Leu Val
155 160 165

cat cac atg ggt gga gtt att cga aaa gac ttt aat tca aaa gtt aca 580
His His Met Gly Gly Val Ile Arg Lys Asp Phe Asn Ser Lys Val Thr
170 175 180

cat ttg gtg gca aat tgt aca caa gga gaa aaa ttc agg gtt gct gtg 628
His Leu Val Ala Asn Cys Thr Gln Gly Glu Lys Phe Arg Val Ala Val
185 190 195 200

agt cta ggt act cca att atg aag cca gaa tgg att tat aaa gct tgg 676
Ser Leu Gly Thr Pro Ile Met Lys Pro Glu Trp Ile Tyr Lys Ala Trp
205 210 215

gaa agg cgg aat gaa cag gat ttc tat gca gca gtt gat gac ttt aga	724
Glu Arg Arg Asn Glu Gln Asp Phe Tyr Ala Ala Val Asp Asp Phe Arg	
220 225 230	
aat gaa ttt aaa gtt cct cca ttt caa gat tgt att ttt agt ttc ctg	772
Asn Glu Phe Lys Val Pro Pro Phe Gln Asp Cys Ile Phe Ser Phe Leu	
235 240 245	
gga ttt tca gat gaa gag aaa acc aat atg gaa gaa atg act gaa atg	820
Gly Phe Ser Asp Glu Glu Lys Thr Asn Met Glu Glu Met Thr Glu Met	
250 255 260	
caa gga ggt aaa tat tta ccg ctt gga gat gaa aga tgc act cac ctt	868
Gln Gly Gly Lys Tyr Leu Pro Leu Gly Asp Glu Arg Cys Thr His Leu	
265 270 275 280	
gta gtt gaa gag aat ata gta aaa gat ctt ccc ttt gaa cct tca aag	916
Val Val Glu Glu Asn Ile Val Lys Asp Leu Pro Phe Glu Pro Ser Lys	
285 290 295	
aaa ctt tat gtt gtc aag caa gag tgg ttc tgg gga agc att caa atg	964
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Pro Glu Leu Lys Lys Ser Ser Ser Met Leu Ser Leu Asn Thr Pro Asn	
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Ser Asn Arg Lys Arg Arg Arg Leu Lys Glu Thr Leu Ala Gln Leu Ser	
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Arg Asp Thr Asp Val Ser Pro Phe Pro Pro Arg Lys Arg Pro Ser Ala	
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Glu His Ser Leu Ser Ile Gly Ser Leu Leu Asp Ile Ser Asn Thr Pro	
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Glu Ser Ser Ile Asn Tyr Gly Asp Thr Pro Lys Ser Cys Thr Lys Ser	
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Val Ala Lys Glu Leu Tyr Gln Thr Glu Ser Asn Tyr Val Asn Ile Leu	
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Arg Gly Gly Pro Ile Leu Ala Pro Glu Glu Ile Lys Thr Ile Phe Gly	
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Ser Ile Pro Asp Ile Phe Asp Val His Thr Lys Ile Lys Asp Asp Leu	
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Phe Leu Lys Tyr Ser Lys Asp Leu Val Lys Thr Tyr Pro Pro Phe Val	
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Asn Phe Phe Glu Met Ser Lys Glu Thr Ile Ile Lys Cys Glu Lys Gln	
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Lys Pro Arg Phe His Ala Phe Leu Lys Ile Asn Gln Ala Lys Pro Glu	
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Cys Gly Arg Gln Ser Leu Val Glu Leu Leu Ile Arg Pro Val Gln Arg	
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Asn Leu Leu Ser Ser His Arg Ser Leu Val Gln Arg Val Glu Thr Ile	
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Lys	His	Ile	His	Leu	Met	Pro	Leu	Ser	Gln	Ile	Lys	Lys	Val	Leu	Asp	
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Pro	Pro	Thr	Glu	Gln	Ala	Asn	Val	Leu	Leu	Ser	Phe	Gln	Met	Thr	Ser	
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Pro	Ser	Pro	Ser	Leu	Val	Ser	Leu	Pro	Ser	Phe	Phe	Glu	Arg	Arg	Ser	
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His	Thr	Leu	Ser	Arg	Ser	Thr	Thr	His	Leu	Ile						
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Val	Ile	Gly	Pro	Glu	Pro	Thr	Gly	Phe	Leu	Leu	Lys	Phe	Asn	Pro	Ser
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Ser	Ser	Leu	Asp	Ile	Gln	Asn	Val	Lys	Gly	Glu	Thr	Pro	Leu	Asp	Met
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Phe	Thr	Lys	Ala	Ser	Glu	Glu	Glu	Lys	Lys	Val	Asn	Ile	Ile	Thr	Leu
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Ala	Glu	Thr	Gly	Ser	Leu	Asp	Phe	Arg	Thr	Phe	Cys	Thr	Ser	Cys	Leu
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Ile	Arg	Lys	Pro	Leu	Arg	Ser	Leu	His	Cys	His	Val	Cys	Asn	Cys	Cys
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Val	Cys	Gly	Trp	Ile	Ile	Tyr	Gly	Ser	Phe	Ile	Tyr	Leu	Ser	Ser	His
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Cys	Ala	Thr	Thr	Phe	Lys	Glu	Asp	Gly	Leu	Trp	Thr	Tyr	Leu	Asn	Gln
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Gln	Ser	Lys	His	Met	Lys	Gln	Thr	Leu	Ser	Leu	Arg	Lys	Thr	Pro	Tyr
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Gly Leu Gly Ser Gln Cys Arg Asn His Ser His Gly Pro His Pro Pro
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Asn Ala Arg Glu Ala Leu Pro Leu Ile Glu Asp Ser Ser Asn Cys Asp
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Val Glu Ala Gly Tyr Asp Val Arg Gln Pro Asp Lys Glu Asn Val Ser
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Leu Leu His Trp Ala Ala Ile Asn Asn Arg Leu Asp Leu Val Lys Phe
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Tyr Ile Ser Lys Gly Ala Val Val Asp Gln Leu Gly Gly Asp Leu Asn
105 110 115

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Ser Thr Pro Leu His Trp Ala Ile Arg Gln Gly His Leu Pro Met Val
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Met Gln Asn Leu Ala Asp Phe Phe Gln Cys Gly Cys Phe Gly Leu Val	
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aag ccc tgt gtg gta gat tgg aca tca cag tac acc atg gtc ttt cac	1939
Lys Pro Cys Val Val Asp Trp Thr Ser Gln Tyr Thr Met Val Phe His	
600 605 610	
cca gcc agg gag aag gtt ctt cgc tca gta tgaagaaaag caaccctaaa	1989
Pro Ala Arg Glu Lys Val Leu Arg Ser Val	
615 620	
ctctcaatct gatttgtttt tgtttatgtc gatgccctgt agtttgaaag tgaagtaaag	2049
atttagaatt cacctaagtc caaaggaaaa cacgtggttt ttaaagccat taggtaaaaa	2109
aagttctcaa taaaggcatt acaatttttt aggttttagaa agatggactt ttctgataaa	2169

tcttggcaga catctaaaaa aaaaaccata tttttcacaa gaaaatgcaa gttacttttt 2229
 ttggaaaataa tactcactga ttatggataa aatggaatat tttcagatac tatattggct 2289
 gtttcaaaat agtactattc tttaaacttg taatttttgc taagttattt gtctttgttg 2349
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 Ser Gln Leu Met Leu Tyr Ala Glu Arg Ala Glu Ala Arg Arg Lys Pro
 35 40 45
 Asp Ile Pro Val Pro Tyr Leu Tyr Phe Asp Met Gly Ala Ala Val Leu
 50 55 60
 Cys Ala Ser Phe Met Ser Phe Gly Val Lys Arg Arg Trp Phe Ala Leu
 65 70 75 80
 Gly Ala Ala Leu Gln Leu Ala Ile Ser Thr Tyr Ala Ala Tyr Ile Gly
 85 90 95
 Gly Tyr Val His Tyr Gly Asp Trp Leu Lys Val Arg Met Tyr Ser Arg
 100 105 110
 Thr Val Ala Ile Ile Gly Gly Phe Leu Val Leu Ala Ser Gly Ala Gly
 115 120 125
 Glu Leu Tyr Arg Arg Lys Pro Arg Ser Arg Ser Leu Gln Ser Thr Gly
 130 135 140
 Gln Val Phe Leu Gly Ile Tyr Leu Ile Cys Val Ala Tyr Ser Leu Gln
 145 150 155 160
 His Ser Lys Glu Asp Arg Leu Ala Tyr Leu Asn His Leu Pro Gly Gly
 165 170 175
 Glu Leu Met Ile Gln Leu Phe Phe Val Leu Tyr Gly Ile Leu Ala Leu
 180 185 190
 Ala Phe Leu Ser Gly Tyr Tyr Val Thr Leu Ala Ala Gln Ile Leu Ala
 195 200 205

Val Leu Leu Pro Pro Val Met Leu Leu Ile Asp Gly Asn Val Ala Tyr
 210 215 220
 Trp His Asn Thr Arg Arg Val Glu Phe Trp Asn Gln Met Lys Leu Leu
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 Gly Glu Ser Val Gly Ile Phe Gly Thr Ala Val Ile Leu Ala Thr Asp
 245 250 255

Gly

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<220>
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atc atg cag ttg ggt tcg gtg ctg ctc aca cgc tgc ccc ttt tgg ggc 99
 Ile Met Gln Leu Gly Ser Val Leu Leu Thr Arg Cys Pro Phe Trp Gly
 15 20 25 30
 tgc ttc agc cag ctc atg ctg tac gct gag agg gct gag gca cgc cgg 147
 Cys Phe Ser Gln Leu Met Leu Tyr Ala Glu Arg Ala Glu Ala Arg Arg
 35 40 45
 aag ccc gac atc cca gtg cct tac ctg tat ttc gac atg ggg gca gcc 195
 Lys Pro Asp Ile Pro Val Pro Tyr Leu Tyr Phe Asp Met Gly Ala Ala
 50 55 60
 gtg ctg tgc gct agt ttc atg tcc ttt ggc gtg aag cgg cgc tgg ttc 243
 Val Leu Cys Ala Ser Phe Met Ser Phe Gly Val Lys Arg Arg Trp Phe
 65 70 75
 gcg ctg ggg gcc gca ctc caa ttg gcc att agc acc tac gcc gcc tac 291
 Ala Leu Gly Ala Ala Leu Gln Leu Ala Ile Ser Thr Tyr Ala Ala Tyr
 80 85 90
 atc ggg ggc tac gtc cac tac ggg gac tgg ctg aag gtc cgt atg tac 339
 Ile Gly Gly Tyr Val His Tyr Gly Asp Trp Leu Lys Val Arg Met Tyr
 95 100 105 110
 tcg cgc aca gtt gcc atc atc ggc ggc ttt ctt gtg ttg gcc agc ggt 387
 Ser Arg Thr Val Ala Ile Ile Gly Gly Phe Leu Val Leu Ala Ser Gly
 115 120 125
 gct ggg gag ctg tac cgc cgg aaa cct cgc agc cgc tcc ctg cag tcc 435
 Ala Gly Glu Leu Tyr Arg Arg Lys Pro Arg Ser Arg Ser Leu Gln Ser

130						135						140							
acc	ggc	cag	gtg	ttc	ctg	ggt	atc	tac	ctc	atc	tgt	gtg	gcc	tac	tca	483			
Thr	Gly	Gln	Val	Phe	Leu	Gly	Ile	Tyr	Leu	Ile	Cys	Val	Ala	Tyr	Ser				
145						150						155							
ctg	cag	cac	agc	aag	gag	gac	cgg	ctg	gcg	tat	ctg	aac	cat	ctc	cca	531			
Leu	Gln	His	Ser	Lys	Glu	Asp	Arg	Leu	Ala	Tyr	Leu	Asn	His	Leu	Pro				
160						165						170							
gga	ggg	gag	ctg	atg	atc	cag	ctg	ttc	ttc	gtg	ctg	tat	ggc	atc	ctg	579			
Gly	Gly	Glu	Leu	Met	Ile	Gln	Leu	Phe	Phe	Val	Leu	Tyr	Gly	Ile	Leu				
175						180						185						190	
gcc	ctg	gcc	ttt	ctg	tca	ggc	tac	tac	gtg	acc	ctc	gct	gcc	cag	atc	627			
Ala	Leu	Ala	Phe	Leu	Ser	Gly	Tyr	Tyr	Val	Thr	Leu	Ala	Ala	Gln	Ile				
195						200						205							
ctg	gct	gta	ctg	ctg	ccc	cct	gtc	atg	ctg	ctc	att	gat	ggc	aat	gtt	675			
Leu	Ala	Val	Leu	Leu	Pro	Pro	Val	Met	Leu	Leu	Ile	Asp	Gly	Asn	Val				
210						215						220							
gct	tac	tgg	cac	aac	acg	cgg	cgt	gtt	gag	ttc	tgg	aac	cag	atg	aag	723			
Ala	Tyr	Trp	His	Asn	Thr	Arg	Arg	Val	Glu	Phe	Trp	Asn	Gln	Met	Lys				
225						230						235							
ctc	ctt	gga	gag	agt	gtg	ggc	atc	ttc	gga	act	gct	gtc	atc	ctg	gcc	771			
Leu	Leu	Gly	Glu	Ser	Val	Gly	Ile	Phe	Gly	Thr	Ala	Val	Ile	Leu	Ala				
240						245						250							
act	gat	ggc	tgagttttat	ggcaagaggc			tgagatgggc			acagggagcc						820			
Thr	Asp	Gly																	
255																			
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tgctgtctct gtttctagct ccatggttgagg cctggtgggg gtggagttcc ctcccaaaca 1480																			
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 <212> PRT
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 35 40 45
 Gln Ile Gln Lys Glu Gln Asp Tyr Gln Arg Tyr Arg Glu Glu Arg Phe
 50 55 60
 Arg Leu Thr Ser Glu Ser Thr Asn Gln Arg Val Leu Trp Trp Ser Ile
 65 70 75 80
 Ala Gln Thr Val Ile Leu Ile Leu Thr Gly Ile Trp Gln Met Arg His
 85 90 95
 Leu Lys Ser Phe Phe Glu Ala Lys Lys Leu Val
 100 105

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 atc cag gtt ggg gag cat gcc aac aac tac cct gag att gct gca aaa 98
 Ile Gln Val Gly Glu His Ala Asn Asn Tyr Pro Glu Ile Ala Ala Lys
 15 20 25 30
 gat aag ctg acg gag cta cag ctc cgc gcc cgc cag ttg ctt gat cag 146
 Asp Lys Leu Thr Glu Leu Gln Leu Arg Ala Arg Gln Leu Leu Asp Gln
 35 40 45
 gtg gaa cag att cag aag gag cag gat tac caa agg tat cgt gaa gag 194
 Val Glu Gln Ile Gln Lys Glu Gln Asp Tyr Gln Arg Tyr Arg Glu Glu
 50 55 60
 cgc ttc cga ctg acg agc gag agc acc aac cag agg gtc cta tgg tgg 242

FOUO - FOUO

<400> 59

Met Met Ile His Gly Phe Gln Ser Ser His Arg Asp Phe Cys Phe Gly
 1 5 10 15

Pro Trp Lys Leu Thr Ala Ser Lys Thr His Ile Met Lys Ser Ala Asp
 20 25 30

Val Glu Lys Leu Ala Asp Glu Leu His Met Pro Ser Leu Pro Glu Met
 35 40 45

Met Phe Gly Asp Asn Val Leu Arg Ile Gln His Gly Ser Gly Phe Gly
 50 55 60

Ile Glu Phe Asn Ala Thr Asp Ala Leu Arg Cys Val Asn Asn Tyr Gln
 65 70 75 80

Gly Met Leu Lys Val Ala Cys Ala Glu Glu Trp Gln Glu Ser Arg Thr
 85 90 95

Glu Gly Glu His Ser Lys Glu Val Ile Lys Pro Tyr Asp Trp Thr Tyr
 100 105 110

Thr Thr Asp Tyr Lys Gly Thr Leu Leu Gly Glu Ser Leu Lys Leu Lys
 115 120 125

Val Val Pro Thr Thr Asp His Ile Asp Thr Glu Lys Leu Lys Ala Arg
 130 135 140

Glu Gln Ile Lys Phe Phe Glu Glu Val Leu Leu Phe Glu Asp Glu Leu
 145 150 155 160

His Asp His Gly Val Ser Ser Leu Ser Val Lys Ile Arg Val Met Pro
 165 170 175

Ser Ser Phe Phe Leu Leu Leu Arg Phe Phe Leu Arg Ile Asp Gly Val
 180 185 190

Leu Ile Arg Met Asn Asp Thr Arg Leu Tyr His Glu Ala Asp Lys Thr
 195 200 205

Tyr Met Leu Arg Glu Tyr Thr Ser Arg Glu Ser Lys Ile Ser Ser Leu
 210 215 220

Met His Val Pro Pro Ser Leu Phe Thr Glu Pro Asn Glu Ile Ser Gln
 225 230 235 240

Tyr Leu Pro Ile Lys Glu Ala Val Cys Glu Lys Leu Ile Phe Pro Glu
 245 250 255

Arg Ile Asp Pro Asn Pro Ala Asp Ser Gln Lys Ser Thr Gln Val Glu
 260 265 270

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<211> 1916

<212> DNA

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Met
1

atg atc cac ggc ttc cag agc agc cac cgg gat ttc tgc ttc ggg ccc 167
Met Ile His Gly Phe Gln Ser Ser His Arg Asp Phe Cys Phe Gly Pro
5 10 15

tgg aag ctg acg gcg tcc aag acc cac atc atg aag tgc gcg gat gtg 215
Trp Lys Leu Thr Ala Ser Lys Thr His Ile Met Lys Ser Ala Asp Val
20 25 30

gag aaa tta gcc gat gaa tta cat atg cca tct ctc cct gaa atg atg 263
Glu Lys Leu Ala Asp Glu Leu His Met Pro Ser Leu Pro Glu Met Met
35 40 45

ttt gga gac aac gtt tta aga atc cag cat ggg tct ggc ttt gga att 311
Phe Gly Asp Asn Val Leu Arg Ile Gln His Gly Ser Gly Phe Gly Ile
50 55 60 65

gag ttc aat gct aca gat gcg tta aga tgt gta aac aac tac caa gga 359
Glu Phe Asn Ala Thr Asp Ala Leu Arg Cys Val Asn Asn Tyr Gln Gly
70 75 80

atg ctt aaa gtg gcc tgt gct gaa gag tgg caa gaa agc agg acg gag 407
Met Leu Lys Val Ala Cys Ala Glu Glu Trp Gln Glu Ser Arg Thr Glu
85 90 95

ggt gaa cac tcc aaa gag gtt att aaa cca tat gat tgg acc tat aca 455
Gly Glu His Ser Lys Glu Val Ile Lys Pro Tyr Asp Trp Thr Tyr Thr
100 105 110

aca gat tat aag gga acc tta ctt gga gaa tct ctt aag tta aag gtt 503
Thr Asp Tyr Lys Gly Thr Leu Leu Gly Glu Ser Leu Lys Leu Lys Val
115 120 125

gta cct aca aca gat cat ata gat aca gaa aaa ttg aaa gcc aga gaa 551
Val Pro Thr Thr Asp His Ile Asp Thr Glu Lys Leu Lys Ala Arg Glu
130 135 140 145

cag att aag ttt ttt gaa gaa gtt ctc ctt ttt gag gat gaa ctt cat 599
Gln Ile Lys Phe Phe Glu Glu Val Leu Leu Phe Glu Asp Glu Leu His
150 155 160

gat cat gga gtt tca agc ctg agt gtg aag att aga gta atg cct tct 647
Asp His Gly Val Ser Ser Leu Ser Val Lys Ile Arg Val Met Pro Ser
165 170 175

agc ttt ttc ctg ctg ttg cgg ttt ttc ttg aga att gat ggg gtg ctt 695

Ser	Phe	Phe	Leu	Leu	Leu	Arg	Phe	Phe	Leu	Arg	Ile	Asp	Gly	Val	Leu	
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Ile	Arg	Met	Asn	Asp	Thr	Arg	Leu	Tyr	His	Glu	Ala	Asp	Lys	Thr	Tyr	
	195					200				205						
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Met	Leu	Arg	Glu	Tyr	Thr	Ser	Arg	Glu	Ser	Lys	Ile	Ser	Ser	Leu	Met	
	210				215					220				225		
cat	gtt	cca	cct	tcc	ctc	ttc	acg	gaa	cct	aat	gaa	ata	tcc	cag	tat	839
His	Val	Pro	Pro	Ser	Leu	Phe	Thr	Glu	Pro	Asn	Glu	Ile	Ser	Gln	Tyr	
				230					235					240		
tta	cca	ata	aag	gaa	gca	gtt	tgt	gag	aag	cta	ata	ttt	cca	gaa	aga	887
Leu	Pro	Ile	Lys	Glu	Ala	Val	Cys	Glu	Lys	Leu	Ile	Phe	Pro	Glu	Arg	
			245					250					255			
att	gat	cct	aac	cca	gca	gac	tca	caa	aaa	agt	aca	caa	gtg	gaa		932
Ile	Asp	Pro	Asn	Pro	Ala	Asp	Ser	Gln	Lys	Ser	Thr	Gln	Val	Glu		
		260					265					270				
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aggggttatt tttattatga gaattaattg ccttggttat gtacagattt tctgtagcct 1052																
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<400> 61

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<210> 62
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<213> Homo sapiens
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<220>
<221> CDS

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145					150					155					160
Ser	Ile	Val	Ala	Tyr	Leu	Ile	Ala	Lys	Gly	Gln	Asp	Val	Asp	Met	Met
				165					170					175	
Asp	Gln	Asn	Gly	Met	Thr	Pro	Leu	Met	Trp	Ala	Ala	Tyr	Arg	Thr	His
			180					185					190		
Ser	Val	Asp	Pro	Thr	Arg	Leu	Leu	Leu	Thr	Phe	Asn	Val	Ser	Val	Asn
		195					200					205			
Leu	Gly	Asp	Lys	Tyr	His	Lys	Asn	Thr	Ala	Leu	His	Trp	Ala	Val	Leu
	210					215					220				
Ala	Gly	Asn	Thr	Thr	Val	Ile	Ser	Leu	Leu	Leu	Glu	Ala	Gly	Ala	Asn
225					230					235					240
Val	Asp	Ala	Gln	Asn	Ile	Lys	Gly	Glu	Ser	Ala	Leu	Asp	Leu	Ala	Lys
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Gln	Arg	Lys	Asn	Val	Trp	Met	Ile	Asn	His	Leu	Gln	Glu	Ala	Arg	Gln
			260					265					270		
Ala	Lys	Gly	Tyr	Asp	Asn	Pro	Ser	Phe	Leu	Arg	Lys	Leu	Lys	Ala	Asp
		275					280					285			
Lys	Glu	Phe	Arg	Gln	Lys	Val	Met	Leu	Gly	Thr	Pro	Phe	Leu	Val	Ile
	290					295					300				
Trp	Leu	Val	Gly	Phe	Ile	Ala	Asp	Leu	Asn	Ile	Asp	Ser	Trp	Leu	Ile
305					310					315					320
Lys	Gly	Leu	Met	Tyr	Gly	Gly	Val	Trp	Ala	Thr	Val	Gln	Phe	Leu	Ser
				325					330					335	
Lys	Ser	Phe	Phe	Asp	His	Ser	Met	His	Ser	Ala	Leu	Pro	Leu	Gly	Ile
			340					345					350		
Tyr	Leu	Ala	Thr	Lys	Phe	Trp	Met	Tyr	Val	Thr	Trp	Phe	Phe	Trp	Phe
		355					360					365			
Trp	Asn	Asp	Leu	Asn	Phe	Leu	Phe	Ile	His	Leu	Pro	Phe	Leu	Ala	Asn
	370					375					380				
Ser	Val	Ala	Leu	Phe	Tyr	Asn	Phe	Gly	Lys	Ser	Trp	Lys	Ser	Asp	Pro
385					390					395					400
Gly	Ile	Ile	Lys	Ala	Thr	Glu	Glu	Gln	Lys	Lys	Lys	Thr	Ile	Val	Glu
				405					410					415	
Leu	Ala	Glu	Thr	Gly	Ser	Leu	Asp	Leu	Ser	Ile	Phe	Cys	Ser	Thr	Cys

				420					425					430	
Leu	Ile	Arg	Lys	Pro	Val	Arg	Ser	Lys	His	Cys	Gly	Val	Cys	Asn	Arg
				435					440					445	
Cys	Ile	Ala	Lys	Phe	Asp	His	His	Cys	Pro	Trp	Val	Gly	Asn	Cys	Val
				450					455					460	
Gly	Ala	Gly	Asn	His	Arg	Tyr	Phe	Met	Gly	Tyr	Leu	Phe	Phe	Leu	Leu
				465					470					475	480
Phe	Met	Ile	Cys	Trp	Met	Ile	Tyr	Gly	Cys	Ile	Ser	Tyr	Trp	Gly	Leu
				485					490					495	
His	Cys	Glu	Thr	Thr	Tyr	Thr	Lys	Asp	Gly	Phe	Trp	Thr	Tyr	Ile	Thr
				500					505					510	
Gln	Ile	Ala	Thr	Cys	Ser	Pro	Trp	Met	Phe	Trp	Met	Phe	Leu	Asn	Ser
				515					520					525	
Val	Phe	His	Phe	Met	Trp	Val	Ala	Val	Leu	Leu	Met	Cys	Gln	Met	Tyr
				530					535					540	
Gln	Ile	Ser	Cys	Leu	Gly	Ile	Thr	Thr	Asn	Glu	Arg	Met	Asn	Ala	Arg
				545					550					555	560
Arg	Tyr	Lys	His	Phe	Lys	Val	Thr	Thr	Thr	Ser	Ile	Glu	Ser	Pro	Phe
				565					570					575	
Asn	His	Gly	Cys	Val	Arg	Asn	Ile	Ile	Asp	Phe	Phe	Glu	Phe	Arg	Cys
				580					585					590	
Cys	Gly	Leu	Phe	Arg	Pro	Val	Ile	Val	Asp	Trp	Thr	Arg	Gln	Tyr	Thr
				595					600					605	
Ile	Glu	Tyr	Asp	Gln	Ile	Ser	Gly	Ser	Gly	Tyr	Gln	Leu	Val		
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ggc tgt gtg ccc ctt ctc cac cca gag gaa atc aaa ccc caa agc cat 97
Gly Cys Val Pro Leu Leu His Pro Glu Glu Ile Lys Pro Gln Ser His
15 20 25

Asp	Leu	Ala	Lys	Gln	Arg	Lys	Asn	Val	Trp	Met	Ile	Asn	His	Leu	Gln	
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gag	gca	agg	caa	gca	aaa	gga	tat	gac	aat	ccg	tcc	ttc	ctt	aga	aag	865
Glu	Ala	Arg	Gln	Ala	Lys	Gly	Tyr	Asp	Asn	Pro	Ser	Phe	Leu	Arg	Lys	
270						275			280							
ctg	aaa	gct	gat	aag	gaa	ttt	cgg	cag	aaa	gta	atg	tta	gga	act	cct	913
Leu	Lys	Ala	Asp	Lys	Glu	Phe	Arg	Gln	Lys	Val	Met	Leu	Gly	Thr	Pro	
285						290			295						300	
ttc	cta	gtt	att	tgg	ctg	gtt	ggg	ttt	ata	gca	gac	cta	aat	att	gat	961
Phe	Leu	Val	Ile	Trp	Leu	Val	Gly	Phe	Ile	Ala	Asp	Leu	Asn	Ile	Asp	
			305						310						315	
tct	tgg	ctc	att	aaa	ggg	cta	atg	tat	ggg	ggg	gtt	tgg	gct	aca	gta	1009
Ser	Trp	Leu	Ile	Lys	Gly	Leu	Met	Tyr	Gly	Gly	Val	Trp	Ala	Thr	Val	
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Gln	Phe	Leu	Ser	Lys	Ser	Phe	Phe	Asp	His	Ser	Met	His	Ser	Ala	Leu	
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Cys	Ser	Thr	Cys	Leu	Ile	Arg	Lys	Pro	Val	Arg	Ser	Lys	His	Cys	Gly	
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Phe	Phe	Leu	Leu	Phe	Met	Ile	Cys	Trp	Met							

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Thr Tyr Ile Thr Gln Ile Ala Thr Cys Ser Pro Trp Met Phe Trp Met			
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Phe Leu Asn Ser Val Phe His Phe Met Trp Val Ala Val Leu Leu Met			
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Cys Gln Met Tyr Gln Ile Ser Cys Leu Gly Ile Thr Thr Asn Glu Arg			
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Glu Phe Arg Cys Cys Gly Leu Phe Arg Pro Val Ile Val Asp Trp Thr			
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Lys Gly Glu Ser Ala Leu Asp Leu Ala Lys Gln Arg Lys Asn Val Trp
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Glu Glu Gln Lys Lys Lys Thr Ile Val Glu Leu Ala Glu Thr Gly Ser
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Gln Ser His Tyr Asn His Gly Tyr Gly Glu Pro Leu Gly Arg Lys Thr
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 Val Arg Pro Phe Asp Gly Asn Ser Pro Ile Leu Tyr Tyr Ile Val Glu
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 Pro Glu Met Thr Gly Val Thr Val Ser Gly Leu Thr Pro Ala Arg Thr
 65 70 75 80
 Tyr Gln Phe Arg Val Cys Ala Val Asn Glu Val Gly Arg Gly Gln Tyr
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 Ser Ala Glu Thr Ser Arg Leu Met Leu Pro Glu Glu Pro Pro Ser Ala
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 Pro Pro Lys Asn Ile Val Ala Ser Gly Arg Thr Asn Gln Ser Ile Met
 115 120 125
 Val Gln Trp Gln Pro Pro Pro Glu Thr Glu His Asn Gly Val Leu Arg
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 Gly Tyr Ile Leu Arg Tyr Arg Leu Ala Gly Leu Pro Gly Glu Tyr Gln
 145 150 155 160
 Gln Arg Asn Ile Thr Ser Pro Glu Val Asn Tyr Cys Leu Val Thr Asp
 165 170 175
 Leu Ile Ile Trp Thr Gln Tyr Glu Ile Gln Val Ala Ala Tyr Asn Gly
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 Ala Gly Leu Gly Val Phe Ser Arg Ala Val Thr Glu Tyr Thr Leu Gln
 195 200 205
 Gly Val Pro Thr Ala Pro Pro Gln Asn Val Gln Thr Glu Ala Val Asn
 210 215 220

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 104

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His	Ser	Pro	Gln	Asn	Leu	Leu	Val	Ser	Pro	Asn	Ser	Ser	His	Ser	His	
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gcc	gtg	gtg	ctc	tct	tgg	gtc	cgg	ccc	ttt	gat	gga	aac	agt	cct	att	147
Ala	Val	Val	Leu	Ser	Trp	Val	Arg	Pro	Phe	Asp	Gly	Asn	Ser	Pro	Ile	
			30					35					40			
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Leu	Tyr	Tyr	Ile	Val	Glu	Leu	Ser	Glu	Asn	Asn	Ser	Pro	Trp	Lys	Val	
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His	Leu	Ser	Asn	Val	Gly	Pro	Glu	Met	Thr	Gly	Val	Thr	Val	Ser	Gly	
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ctg	act	ccg	gct	cgt	acc	tat	caa	ttc	cgg	gtg	tgc	gcg	gtg	aat	gaa	291
Leu	Thr	Pro	Ala	Arg	Thr	Tyr	Gln	Phe	Arg	Val	Cys	Ala	Val	Asn	Glu	
	75				80					85					90	
gtg	ggc	agg	ggc	cag	tac	agt	gcc	gag	aca	agc	agg	ttg	atg	cta	cct	339
Val	Gly	Arg	Gly	Gln	Tyr	Ser	Ala	Glu	Thr	Ser	Arg	Leu	Met	Leu	Pro	
				95					100					105		
gaa	gaa	cca	ccc	agt	gct	ccc	ccg	aaa	aat	ata	gtg	gcc	agt	ggg	cgg	387
Glu	Glu	Pro	Pro	Ser	Ala	Pro	Pro	Lys	Asn	Ile	Val	Ala	Ser	Gly	Arg	
			110					115					120			
act	aat	cag	tcc	att	atg	gtc	cag	tgg	cag	cca	ccc	cca	gaa	aca	gag	435
Thr	Asn	Gln	Ser	Ile	Met	Val	Gln	Trp	Gln	Pro	Pro	Pro	Glu	Thr	Glu	
		125					130					135				
cac	aac	ggg	gtg	ttg	cgt	gga	tac	atc	ctc	agg	tac	cgc	ctg	gct	ggc	483
His	Asn	Gly	Val	Leu	Arg	Gly	Tyr	Ile	Leu	Arg	Tyr	Arg	Leu	Ala	Gly	
	140					145					150					
ctt	ccc	gga	gag	tac	cag	cag	cgg	aac	atc	acc	agc	ccg	gag	gtg	aac	531
Leu	Pro	Gly	Glu	Tyr	Gln	Gln	Arg	Asn	Ile	Thr	Ser	Pro	Glu	Val	Asn	
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acc gag tac acc ttg cag gga gtg ccc acc gcg ccc ccg cag aac gtg Thr Glu Tyr Thr Leu Gln Gly Val Pro Thr Ala Pro Pro Gln Asn Val 205 210 215	675
cag acg gaa gcc gtg aac tcc acc acc att cag ttc ctg tgg aac cct Gln Thr Glu Ala Val Asn Ser Thr Thr Ile Gln Phe Leu Trp Asn Pro 220 225 230	723
ccg cct cag cag ttt atc aat ggc atc aac cag gga tac aag ctt ctg Pro Pro Gln Gln Phe Ile Asn Gly Ile Asn Gln Gly Tyr Lys Leu Leu 235 240 245 250	771
gca tgg ccg gca gat gcc ccc gag gct gtc act gtg gtc act att gcc Ala Trp Pro Ala Asp Ala Pro Glu Ala Val Thr Val Val Thr Ile Ala 255 260 265	819
cca gat ttc cac gga gtc cac cat gga cac ata acg aac ctg aag aag Pro Asp Phe His Gly Val His His Gly His Ile Thr Asn Leu Lys Lys 270 275 280	867
ttt acc gcc tac ttc act tcc gtt ctg tgc ttc acc acc cct ggg gac Phe Thr Ala Tyr Phe Thr Ser Val Leu Cys Phe Thr Thr Pro Gly Asp 285 290 295	915
ggg cct ccc agc aca cct cag ctg gtc tgg act cag gaa gac aaa cca Gly Pro Pro Ser Thr Pro Gln Leu Val Trp Thr Gln Glu Asp Lys Pro 300 305 310	963
gga gct gtg gga cat ctg agt ttc aca gag atc ttg gac aca tct ctc Gly Ala Val Gly His Leu Ser Phe Thr Glu Ile Leu Asp Thr Ser Leu 315 320 325 330	1011
aag gtc agc tgg cag gag ccc ctg gag aaa aat ggc atc att act ggc Lys Val Ser Trp Gln Glu Pro Leu Glu Lys Asn Gly Ile Ile Thr Gly 335 340 345	1059
tat cag atc tct tgg gaa gtg tac ggc agg aac gac tct cgt ctc acg Tyr Gln Ile Ser Trp Glu Val Tyr Gly Arg Asn Asp Ser Arg Leu Thr 350 355 360	1107
cac acc ctg aac agc acg atg cac gag tac aag atc caa ggc ctc tca His Thr Leu Asn Ser Thr Met His Glu Tyr Lys Ile Gln Gly Leu Ser 365 370 375	1155
tct ctc acc acc tac acc atc gac gtg gcc gct gtg act gcc gtg ggc Ser Leu Thr Thr Tyr Thr Ile Asp Val Ala Ala Val Thr Ala Val Gly 380 385 390	1203
act ggc ctg gtg act tca tcc acc att tct tct gga gtg ccc cca gac Thr Gly Leu Val Thr Ser Ser Thr Ile Ser Ser Gly Val Pro Pro Asp 395 400 405 410	1251
ctt cct ggt gcc cca tcc aac ctg gtc att tcc aac atc agc cct cgc	1299

SECRET

Tyr	Gln	Phe	Arg	Val	Cys	Ala	Val	Asn	Glu	Val	Gly	Arg	Gly	Gln	Tyr
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Ser	Ala	Glu	Thr	Ser	Arg	Leu	Met	Leu	Pro	Glu	Glu	Pro	Pro	Ser	Ala
			100					105					110		
Pro	Pro	Lys	Asn	Ile	Val	Ala	Ser	Gly	Arg	Thr	Asn	Gln	Ser	Ile	Met
		115					120					125			
Val	Gln	Trp	Gln	Pro	Pro	Pro	Glu	Thr	Glu	His	Asn	Gly	Val	Leu	Arg
	130					135					140				
Gly	Tyr	Ile	Leu	Arg	Tyr	Arg	Leu	Ala	Gly	Leu	Pro	Gly	Glu	Tyr	Gln
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Gln	Arg	Asn	Ile	Thr	Ser	Pro	Glu	Val	Asn	Tyr	Cys	Leu	Val	Thr	Asp
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Leu	Ile	Ile	Trp	Thr	Gln	Tyr	Glu	Ile	Gln	Val	Ala	Ala	Tyr	Asn	Gly
			180					185					190		
Ala	Gly	Leu	Gly	Val	Phe	Ser	Arg	Ala	Val	Thr	Glu	Tyr	Thr	Leu	Gln
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Gly	Val	Pro	Thr	Ala	Pro	Pro	Gln	Asn	Val	Gln	Thr	Glu	Ala	Val	Asn
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Ser	Thr	Thr	Ile	Gln	Phe	Leu	Trp	Asn	Pro	Pro	Pro	Gln	Gln	Phe	Ile
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Asn	Gly	Ile	Asn	Gln	Gly	Tyr	Lys	Leu	Leu	Ala	Trp	Pro	Ala	Asp	Ala
			245						250					255	
Pro	Glu	Ala	Val	Thr	Val	Val	Thr	Ile	Ala	Pro	Asp	Phe	His	Gly	Val
			260					265					270		
His	His	Gly	His	Ile	Thr	Asn	Leu	Lys	Lys	Phe	Thr	Ala	Tyr	Phe	Thr
		275					280					285			
Ser	Val	Leu	Cys	Phe	Thr	Thr	Pro	Gly	Asp	Gly	Pro	Pro	Ser	Thr	Pro
	290					295					300				
Gln	Leu	Val	Trp	Thr	Gln	Glu	Asp	Lys	Pro	Gly	Ala	Val	Gly	His	Leu
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Ser	Phe	Thr	Glu	Ile	Leu	Asp	Thr	Ser	Leu	Lys	Val	Ser	Trp	Gln	Glu
				325					330					335	
Pro	Leu	Glu	Lys	Asn	Gly	Ile	Ile	Thr	Gly	Tyr	Gln	Ile	Ser	Trp	Glu
			340					345					350		
Val	Tyr	Gly	Arg	Asn	Asp	Ser	Arg	Leu	Thr	His	Thr	Leu	Asn	Ser	Thr
		355					360					365			
Thr	His	Glu	Tyr	Lys	Ile	Gln	Gly	Leu	Ser	Ser	Leu	Thr	Thr	Tyr	Thr
						375					380				

$$A = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}, \quad B = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}, \quad C = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}, \quad D = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

Ser Thr Ile Ser Ser Gly Val Pro Pro Asp Leu Pro Gly Ala Pro Ser
405 410 415

Asn Leu Val Ile Ser Asn Ile Ser Pro Arg Ser Ala Thr Leu Gln Phe
420 425 430

Arg Pro Gly Tyr Asp Gly Lys Thr Ser Ile Ser Arg Trp Ile Val Glu
435 440 445

Gly Gln Met Arg His Gln Gly Val Gly Leu Pro Ala Glu Val Thr Gln
450 455 460

Pro	Ser	His	Glu	Ala	Gly	Leu	Glu	Pro	Ala	Asn	Leu	Gly	Ser	Leu	Trp
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Ser Cys

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His Ser Pro Gln Asn Leu Leu Val Ser Pro Asn Ser Ser His Ser His
15 20 25

gcc gtg gtg ctc tct tgg gtc cgg ccc ttt gat gga aac agt cct att 147
Ala Val Val Leu Ser Trp Val Arg Pro Phe Asp Gly Asn Ser Pro Ile
30 35 40

ctt tat tac atc gtg gag ctg tct gaa aac aac tct cca tgg aag gtg 195
Leu Tyr Tyr Ile Val Glu Leu Ser Glu Asn Asn Ser Pro Trp Lys Val

45 50 55

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His Leu Ser Asn Val Gly Pro Glu Met Thr Gly Val Thr Val Ser Gly
60 65 70

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Leu Thr Pro Ala Arg Thr Tyr Gln Phe Arg Val Cys Ala Val Asn Glu

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Val Gly Arg Gly Gln Tyr Ser Ala Glu Thr Ser Arg Leu Met Leu Pro	95	100	105	
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Glu Glu Pro Pro Ser Ala Pro Pro Lys Asn Ile Val Ala Ser Gly Arg	110	115	120	
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Thr Asn Gln Ser Ile Met Val Gln Trp Gln Pro Pro Pro Glu Thr Glu	125	130	135	
cac aac ggg gtg ttg cgt gga tac atc ctc agg tac cgc ctg gct ggc				483
His Asn Gly Val Leu Arg Gly Tyr Ile Leu Arg Tyr Arg Leu Ala Gly	140	145	150	
ctt ccc gga gag tac cag cag cgg aac atc acc agc ccg gag gtg aac				531
Leu Pro Gly Glu Tyr Gln Gln Arg Asn Ile Thr Ser Pro Glu Val Asn	155	160	165	170
tac tgc ctg gtg aca gac ctg atc atc tgg aca cag tat gag ata cag				579
Tyr Cys Leu Val Thr Asp Leu Ile Ile Trp Thr Gln Tyr Glu Ile Gln	175	180	185	
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Val Ala Ala Tyr Asn Gly Ala Gly Leu Gly Val Phe Ser Arg Ala Val	190	195	200	
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Thr Glu Tyr Thr Leu Gln Gly Val Pro Thr Ala Pro Pro Gln Asn Val	205	210	215	
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Gln Thr Glu Ala Val Asn Ser Thr Thr Ile Gln Phe Leu Trp Asn Pro	220	225	230	
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Pro Pro Gln Gln Phe Ile Asn Gly Ile Asn Gln Gly Tyr Lys Leu Leu	235	240	245	250
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Ala Trp Pro Ala Asp Ala Pro Glu Ala Val Thr Val Val Thr Ile Ala	255	260	265	
cca gat ttc cac gga gtc cac cat gga cac ata acg aac ctg aag aag				867
Pro Asp Phe His Gly Val His His Gly His Ile Thr Asn Leu Lys Lys	270	275	280	
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Phe Thr Ala Tyr Phe Thr Ser Val Leu Cys Phe Thr Thr Pro Gly Asp	285	290	295	
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Gly Pro Pro Ser Thr Pro Gln Leu Val Trp Thr Gln Glu Asp Lys Pro	300	305	310	

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 335 340 345

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 Tyr Gln Ile Ser Trp Glu Val Tyr Gly Arg Asn Asp Ser Arg Leu Thr
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 445 450 455

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 Pro Ala Glu Val Thr Gln Pro Ser His Glu Ala Gly Leu Glu Pro Ala
 460 465 470

aac ctc gga agt ctg tgg ctg ctc agc ctg gtg tat tgg tgt tac agc 1491
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 175 180 185 190

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 210 215 220

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 Val Arg Lys Arg Trp Arg Leu Val Lys Gln Val Ser His Val Gly Val
 225 230 235

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 Leu Gly Gln Trp Ile Gln Arg
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Ala	Arg	Val	Ser	Gln	Glu	Leu	Lys	Gly	Ala	Lys	Lys	Val	His	Leu	Gly
		35					40					45			
Glu	Asp	Leu	Lys	Ser	Ile	Leu	Ser	Glu	Ala	Pro	Gly	Lys	Cys	Val	Pro
	50					55					60				
Tyr	Ala	Val	Ile	Glu	Gly	Ala	Val	Arg	Ser	Val	Lys	Glu	Thr	Leu	Asn
	65					70					75				80
Ser	Gln	Phe	Val	Glu	Asn	Cys	Lys	Gly	Val	Ile	Gln	Arg	Leu	Thr	Leu
				85					90					95	
Gln	Glu	His	Lys	Met	Val	Trp	Asn	Arg	Thr	Thr	His	Leu	Trp	Asn	Asp
			100					105					110		
Cys	Ser	Lys	Ile	Ile	His	Gln	Arg	Thr	Asn	Thr	Val	Pro	Phe	Asp	Leu
		115					120					125			
Val	Pro	His	Glu	Asp	Gly	Val	Asp	Val	Ala	Val	Arg	Val	Leu	Lys	Pro
	130					135					140				
Leu	Asp	Ser	Val	Asp	Leu	Gly	Leu	Glu	Thr	Val	Tyr	Glu	Lys	Phe	His
	145					150					155				160
Pro	Ser	Ile	Gln	Ser	Phe	Thr	Asp	Val	Ile	Gly	His	Tyr	Ile	Ser	Gly
				165					170					175	
Glu	Arg	Pro	Lys	Gly	Ile	Gln	Glu	Thr	Glu	Glu	Met	Leu	Lys	Val	Gly
			180					185					190		
Ala	Thr	Leu	Thr	Gly	Val	Gly	Glu	Leu	Val	Leu	Asp	Asn	Asn	Ser	Val
		195					200					205			
Arg	Leu	Gln	Pro	Pro	Lys	Gln	Gly	Met	Gln	Tyr	Tyr	Leu	Ser	Ser	Gln
	210					215					220				
Asp	Phe	Asp	Ser	Leu	Leu	Gln	Arg	Gln	Glu	Ser	Ser	Val	Arg	Leu	Trp
	225					230					235				240
Lys	Val	Leu	Ala	Leu	Val	Phe	Gly	Phe	Ala	Thr	Cys	Ala	Thr	Leu	Phe
				245					250					255	
Phe	Ile	Leu	Arg	Lys	Gln	Tyr	Leu	Gln	Arg	Gln	Glu	Arg	Leu	Arg	Leu
			260					265					270		
Lys	Gln	Met	Gln	Glu	Glu	Phe	Gln	Glu	His	Glu	Ala	Gln	Leu	Leu	Ser
		275					280					285			
Arg	Ala	Lys	Pro	Glu	Asp	Arg	Glu	Ser	Leu	Lys	Ser	Ala	Cys	Val	Val
	290					295					300				
Cys	Leu	Ser	Ser	Phe	Lys	Ser	Cys	Val	Phe	Leu	Glu	Cys	Gly	His	Val
	305					310					315				320
Cys	Ser	Cys	Thr	Glu	Cys	Tyr	Arg	Ala	Leu	Pro	Glu	Pro	Lys	Lys	Cys

325 330 335

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340 345 350

<210> 74
<211> 2401
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (103)..(1158)

<400> 74
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Met Glu Ser Gly
1
ggg cgg ccc tcg ctg tgc cag ttc atc ctc ctg ggc acc acc tct gtg 162
Gly Arg Pro Ser Leu Cys Gln Phe Ile Leu Leu Gly Thr Thr Ser Val
5 10 15 20
gtc acc gcc gcc ctg tac tcc gtg tac cgg cag aag gcc cgg gtc tcc 210
Val Thr Ala Ala Leu Tyr Ser Val Tyr Arg Gln Lys Ala Arg Val Ser
25 30 35
caa gag ctc aag gga gct aaa aaa gtt cat ttg ggt gaa gat tta aag 258
Gln Glu Leu Lys Gly Ala Lys Lys Val His Leu Gly Glu Asp Leu Lys
40 45 50
agt att ctt tca gaa gct cca gga aaa tgc gtg cct tat gct gtt ata 306
Ser Ile Leu Ser Glu Ala Pro Gly Lys Cys Val Pro Tyr Ala Val Ile
55 60 65
gaa gga gct gtg cgg tct gtt aaa gaa acg ctt aac agc cag ttt gtg 354
Glu Gly Ala Val Arg Ser Val Lys Glu Thr Leu Asn Ser Gln Phe Val
70 75 80
gaa aac tgc aag ggg gta att cag cgg ctg aca ctt cag gag cac aag 402
Glu Asn Cys Lys Gly Val Ile Gln Arg Leu Thr Leu Gln Glu His Lys
85 90 95 100
atg gtg tgg aat cga acc acc cac ctt tgg aat gat tgc tca aag atc 450
Met Val Trp Asn Arg Thr Thr His Leu Trp Asn Asp Cys Ser Lys Ile
105 110 115
att cat cag agg acc aac aca gtg ccc ttt gac ctg gtg ccc cac gag 498
Ile His Gln Arg Thr Asn Thr Val Pro Phe Asp Leu Val Pro His Glu
120 125 130
gat ggc gtg gat gtg gct gtg cga gtg ctg aag ccc ctg gac tca gtg 546
Asp Gly Val Asp Val Ala Val Arg Val Leu Lys Pro Leu Asp Ser Val
135 140 145

gat ctg ggt cta gag act gtg tat gag aag ttc cac ccc tcg att cag 594
 Asp Leu Gly Leu Glu Thr Val Tyr Glu Lys Phe His Pro Ser Ile Gln
 150 155 160

tcc ttc acc gat gtc atc ggc cac tac atc agc ggt gag cgg ccc aaa 642
 Ser Phe Thr Asp Val Ile Gly His Tyr Ile Ser Gly Glu Arg Pro Lys
 165 170 175 180

ggc atc caa gag acc gag gag atg ctg aag gtg ggg gcc acc ctc aca 690
 Gly Ile Gln Glu Thr Glu Glu Met Leu Lys Val Gly Ala Thr Leu Thr
 185 190 195

ggg gtt ggc gaa ctg gtc ctg gac aac aac tct gtc cgc ctg cag ccg 738
 Gly Val Gly Glu Leu Val Leu Asp Asn Asn Ser Val Arg Leu Gln Pro
 200 205 210

ccc aaa caa ggc atg cag tac tat cta agc agc cag gac ttc gac agc 786
 Pro Lys Gln Gly Met Gln Tyr Tyr Leu Ser Ser Gln Asp Phe Asp Ser
 215 220 225

ctg ctg cag agg cag gag tcg agc gtc agg ctc tgg aag gtg ctg gcg 834
 Leu Leu Gln Arg Gln Glu Ser Ser Val Arg Leu Trp Lys Val Leu Ala
 230 235 240

ctg gtt ttt ggc ttt gcc aca tgt gcc acc ctc ttc ttc att ctc cgg 882
 Leu Val Phe Gly Phe Ala Thr Cys Ala Thr Leu Phe Phe Ile Leu Arg
 245 250 255 260

aag cag tat ctg cag cgg cag gag cgc ctg cgc ctc aag cag atg cag 930
 Lys Gln Tyr Leu Gln Arg Gln Glu Arg Leu Arg Leu Lys Gln Met Gln
 265 270 275

gag gag ttc cag gag cat gag gcc cag ctg ctg agc cga gcc aag cct 978
 Glu Glu Phe Gln Glu His Glu Ala Gln Leu Leu Ser Arg Ala Lys Pro
 280 285 290

gag gac agg gag agt ctg aag agc gcc tgt gta gtg tgt ctg agc agc 1026
 Glu Asp Arg Glu Ser Leu Lys Ser Ala Cys Val Val Cys Leu Ser Ser
 295 300 305

ttc aag tcc tgc gtc ttt ctg gag tgt ggg cac gtt tgt tcc tgc acc 1074
 Phe Lys Ser Cys Val Phe Leu Glu Cys Gly His Val Cys Ser Cys Thr
 310 315 320

gag tgc tac cgc gcc ttg cca gag ccc aag aag tgc cct atc tgc aga 1122
 Glu Cys Tyr Arg Ala Leu Pro Glu Pro Lys Lys Cys Pro Ile Cys Arg
 325 330 335 340

cag gcg atc acc cgg gtg ata ccc ccg tac aac agc taatagtttg 1168
 Gln Ala Ile Thr Arg Val Ile Pro Pro Tyr Asn Ser
 345 350

gaagccgcac agcttgacct ggaagcacc ctgccccctt ttcagggatt tttatctcga 1228

ggccttttggg ggagcagtggt tgggggtagc tgtcacctcc aggtatgatt gagggaggaa 1288

tcgggtagaa actctccaga cccatgcctc caatggcagg atgctgcctt tcccacctga 1348
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tcgcttctcc ttgtgttacc cctccagct attaccattt gccctcacc tgcccttggt 2188
gagcctttta gtgcaagaca gatggggctg ttttcccca cctctgagta gttggaggtc 2248
acatacacag ctcttttttt attgcccttt tctgcctctg aatgttcac tctcgtcctc 2308
ctttgtgcag gcgaggaagg ggtgccctca ggggcccaga ctagtgtgat gcagtgtcca 2368
gtgtgaacag cagaaattaa acatgttgca acc 2401

<210> 75
<211> 352
<212> PRT
<213> Homo sapiens

<400> 75
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20 25 30
Ala Arg Val Ser Gln Glu Leu Lys Gly Ala Lys Lys Val His Leu Gly
35 40 45
Glu Asp Leu Lys Ser Ile Leu Ser Glu Ala Pro Gly Lys Cys Val Pro
50 55 60

Tyr Ala Val Ile Glu Gly Ala Val Arg Ser Val Lys Glu Thr Leu Asn
 65 70 75 80
 Ser Gln Phe Val Glu Asn Cys Lys Gly Val Ile Gln Arg Leu Thr Leu
 85 90 95
 Gln Glu His Lys Met Val Trp Asn Arg Thr Thr His Leu Trp Asn Asp
 100 105 110
 Cys Ser Lys Ile Ile His Gln Arg Thr Asn Thr Val Pro Phe Asp Leu
 115 120 125
 Val Pro His Glu Asp Gly Val Asp Val Ala Val Arg Val Leu Lys Pro
 130 135 140
 Leu Asp Ser Val Asp Leu Gly Leu Glu Thr Val Tyr Glu Lys Phe His
 145 150 155 160
 Pro Ser Ile Gln Ser Phe Thr Asp Val Ile Gly His Tyr Ile Ser Gly
 165 170 175
 Glu Arg Pro Lys Gly Ile Gln Glu Thr Glu Glu Met Leu Lys Val Gly
 180 185 190
 Ala Thr Leu Thr Gly Val Gly Glu Leu Val Leu Asp Asn Asn Ser Val
 195 200 205
 Arg Leu Gln Pro Pro Lys Gln Gly Met Gln Tyr Tyr Leu Ser Ser Gln
 210 215 220
 Asp Phe Asp Ser Leu Leu Gln Arg Gln Glu Ser Ser Val Arg Leu Trp
 225 230 235 240
 Lys Val Leu Ala Leu Val Phe Gly Phe Ala Thr Cys Ala Thr Leu Phe
 245 250 255
 Phe Ile Leu Arg Lys Gln Tyr Leu Gln Arg Gln Glu Arg Leu Arg Leu
 260 265 270
 Lys Gln Met Gln Glu Glu Phe Gln Glu His Glu Ala Gln Leu Leu Ser
 275 280 285
 Arg Ala Lys Pro Glu Asp Arg Glu Ser Leu Lys Ser Ala Cys Val Val
 290 295 300
 Cys Leu Ser Ser Phe Lys Ser Cys Val Phe Leu Glu Cys Gly His Val
 305 310 315 320
 Cys Ser Cys Thr Glu Cys Tyr Arg Ala Leu Pro Glu Pro Lys Lys Cys
 325 330 335
 Pro Ile Cys Arg Gln Ala Ile Thr Arg Val Ile Pro Leu Tyr Asn Ser
 340 345 350

<210> 76
 <211> 2401

<212> DNA
<213> Homo sapiens

<220>
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<222> (103)..(1158)

<400> 76

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Met Glu Ser Gly
1

ggg cgg ccc tcg ctg tgc cag ttc atc ctc ctg ggc acc acc tct gtg 162
Gly Arg Pro Ser Leu Cys Gln Phe Ile Leu Leu Gly Thr Thr Ser Val
5 10 15 20

gtc acc gcc gcc ctg tac tcc gtg tac cgg cag aag gcc cgg gtc tcc 210
Val Thr Ala Ala Leu Tyr Ser Val Tyr Arg Gln Lys Ala Arg Val Ser
25 30 35

caa gag ctc aag gga gct aaa aaa gtt cat ttg ggt gaa gat tta aag 258
Gln Glu Leu Lys Gly Ala Lys Lys Val His Leu Gly Glu Asp Leu Lys
40 45 50

agt att ctt tca gaa gct cca gga aaa tgc gtg cct tat gct gtt ata 306
Ser Ile Leu Ser Glu Ala Pro Gly Lys Cys Val Pro Tyr Ala Val Ile
55 60 65

gaa gga gct gtg cgg tct gtt aaa gaa acg ctt aac agc cag ttt gtg 354
Glu Gly Ala Val Arg Ser Val Lys Glu Thr Leu Asn Ser Gln Phe Val
70 75 80

gaa aac tgc aag ggg gta att cag cgg ctg aca ctt cag gag cac aag 402
Glu Asn Cys Lys Gly Val Ile Gln Arg Leu Thr Leu Gln Glu His Lys
85 90 95 100

atg gtg tgg aat cga acc acc cac ctt tgg aat gat tgc tca aag atc 450
Met Val Trp Asn Arg Thr His Leu Trp Asn Asp Cys Ser Lys Ile
105 110 115

att cat cag agg acc aac aca gtg ccc ttt gac ctg gtg ccc cac gag 498
Ile His Gln Arg Thr Asn Thr Val Pro Phe Asp Leu Val Pro His Glu
120 125 130

gat ggc gtg gat gtg gct gtg cga gtg ctg aag ccc ctg gac tca gtg 546
Asp Gly Val Asp Val Ala Val Arg Val Leu Lys Pro Leu Asp Ser Val
135 140 145

gat ctg ggt cta gag act gtg tat gag aag ttc cac ccc tcg att cag 594
Asp Leu Gly Leu Glu Thr Val Tyr Glu Lys Phe His Pro Ser Ile Gln
150 155 160

tcc ttc acc gat gtc atc ggc cac tac atc agc ggt gag cgg ccc aaa 642
Ser Phe Thr Asp Val Ile Gly His Tyr Ile Ser Gly Glu Arg Pro Lys
165 170 175 180

ggc atc caa gag acc gag gag atg ctg aag gtg ggg gcc acc ctc aca 690
 Gly Ile Gln Glu Thr Glu Glu Met Leu Lys Val Gly Ala Thr Leu Thr
 185 190 195

ggg gtt ggc gaa ctg gtc ctg gac aac aac tct gtc cgc ctg cag ccg 738
 Gly Val Gly Glu Leu Val Leu Asp Asn Asn Ser Val Arg Leu Gln Pro
 200 205 210

ccc aaa caa ggc atg cag tac tat cta agc agc cag gac ttc gac agc 786
 Pro Lys Gln Gly Met Gln Tyr Tyr Leu Ser Ser Gln Asp Phe Asp Ser
 215 220 225

ctg ctg cag agg cag gag tcg agc gtc agg ctc tgg aag gtg ctg gcg 834
 Leu Leu Gln Arg Gln Glu Ser Ser Val Arg Leu Trp Lys Val Leu Ala
 230 235 240

ctg gtt ttt ggc ttt gcc aca tgt gcc acc ctc ttc ttc att ctc cgg 882
 Leu Val Phe Gly Phe Ala Thr Cys Ala Thr Leu Phe Phe Ile Leu Arg
 245 250 255 260

aag cag tat ctg cag cgg cag gag cgc ctg cgc ctc aag cag atg cag 930
 Lys Gln Tyr Leu Gln Arg Gln Glu Arg Leu Arg Leu Lys Gln Met Gln
 265 270 275

gag gag ttc cag gag cat gag gcc cag ctg ctg agc cga gcc aag cct 978
 Glu Glu Phe Gln Glu His Glu Ala Gln Leu Leu Ser Arg Ala Lys Pro
 280 285 290

gag gac agg gag agt ctg aag agc gcc tgt gta gtg tgt ctg agc agc 1026
 Glu Asp Arg Glu Ser Leu Lys Ser Ala Cys Val Val Cys Leu Ser Ser
 295 300 305

ttc aag tcc tgc gtc ttt ctg gag tgt ggg cac gtt tgt tcc tgc acc 1074
 Phe Lys Ser Cys Val Phe Leu Glu Cys Gly His Val Cys Ser Cys Thr
 310 315 320

gag tgc tac cgc gcc ttg cca gag ccc aag aag tgc cct atc tgc aga 1122
 Glu Cys Tyr Arg Ala Leu Pro Glu Pro Lys Lys Cys Pro Ile Cys Arg
 325 330 335 340

cag gcg atc acc cgg gtg ata ccc ctg tac aac agc taatagtttg 1168
 Gln Ala Ile Thr Arg Val Ile Pro Leu Tyr Asn Ser
 345 350

gaagccgcac agcttgacct ggaagcacc ctgccccctt ttcagggatt tttatctcga 1228

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tcgggtagaa actctccaga cccatgcctc caatggcagg atgctgcctt tcccacctga 1348

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gtgtgaacag cagaaattaa acatgttgca acc 2401

<210> 77
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<212> PRT
<213> Homo sapiens

<400> 77
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Met Thr Arg Leu Glu Glu Val Asn Arg Glu Val Asn Met His Ser Ser
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Val Arg Tyr Leu Gly Tyr Leu Ala Arg Ile Asn Leu Leu Val Ala Ile
35 40 45
Cys Leu Gly Leu Tyr Val Arg Trp Glu Lys Thr Ala Asn Ser Leu Ile
50 55 60
Leu Val Ile Phe Ile Leu Gly Leu Phe Val Leu Gly Ile Ala Ser Ile
65 70 75 80
Leu Tyr Tyr Tyr Phe Ser Met Glu Ala Ala Ser Leu Ser Leu Ser Asn
85 90 95
Leu Trp Phe Gly Phe Leu Leu Gly Leu Leu Cys Phe Leu Asp Asn Ser
100 105 110

Ser Phe Lys Asn Asp Val Lys Glu Glu Ser Thr Lys Tyr Leu Leu Leu
115 120 125

Thr Ser Ile Val Leu Arg Ile Leu Cys Ser Leu Val Glu Arg Ile Ser
130 135 140

Gly Tyr Val Arg His Arg Pro Thr Leu Leu Thr Thr Val Glu Phe Leu
145 150 155 160

Glu Leu Val Gly Phe Ala Ile Ala Ser Thr Thr Met Leu Val Glu Lys
165 170 175

Ser Leu Ser Val Ile Leu Leu Val Val Ala Leu Ala Met Leu Ile Ile
180 185 190

Asp Leu Arg Met Lys Ser Phe Leu Ala Ile Pro Asn Leu Val Ile Phe
195 200 205

Ala Val Leu Leu Phe Phe Ser Ser Leu Glu Thr Pro Lys Asn Pro Ile
210 215 220

Ala Phe Ala Cys Phe Phe Ile Cys Leu Ile Thr Asp Pro Phe Leu Asp
225 230 235 240

Ile Tyr Phe Ser Gly Leu Ser Val Thr Glu Arg Trp Lys Pro Phe Leu
245 250 255

Tyr Arg Gly Arg Ile Cys Arg Arg Leu Ser Val Val Phe Ala Gly Met
260 265 270

Ile Glu Leu Thr Phe Phe Ile Leu Ser Ala Phe Lys Leu Arg Asp Thr
275 280 285

His Leu Trp Tyr Phe Val Ile Pro Gly Phe Ser Ile Phe Gly Ile Phe
290 295 300

Trp Met Ile Cys His Ile Ile Phe Leu Leu Thr Leu Trp Gly Phe His
305 310 315 320

Thr Lys Leu Asn Asp Cys His Lys Val Tyr Phe Thr His Arg Thr Asp
325 330 335

Tyr Asn Ser Leu Asp Arg Ile Met Ala Ser Lys Gly Met Arg His Phe
340 345 350

Cys Leu Ile Ser Glu Gln Leu Val Phe Phe Ser Leu Leu Ala Thr Ala
355 360 365

Ile Leu Gly Ala Val Ser Trp Gln Pro Thr Asn Gly Ile Phe Leu Ser
370 375 380

Met Phe Leu Ile Val Leu Pro Leu Glu Ser Met Ala His Gly Leu Phe
385 390 395 400

His Glu Leu Gly Asn Cys Leu Gly Gly Thr Ser Val Gly Tyr Ala Ile
405 410 415

100

aga att tct ggt tat gtc cgt cat cgg ccc act tta cta acc aca gtt	842
Arg Ile Ser Gly Tyr Val Arg His Arg Pro Thr Leu Leu Thr Thr Val	
145 150 155	
gaa ttt ctg gag ctt gtt gga ttt gcc att gcc agc aca act atg ttg	890
Glu Phe Leu Glu Leu Val Gly Phe Ala Ile Ala Ser Thr Thr Met Leu	
160 165 170	
gtg gag aag tct ctg agt gtc att ttg ctt gtt gta gct ctg gct atg	938
Val Glu Lys Ser Leu Ser Val Ile Leu Leu Val Val Ala Leu Ala Met	
175 180 185	
ctg att att gat ctg aga atg aaa tct ttc tta gct att cca aac tta	986
Leu Ile Ile Asp Leu Arg Met Lys Ser Phe Leu Ala Ile Pro Asn Leu	
190 195 200 205	
gtt att ttt gca gtt ttg tta ttt ttt tcc tca ttg gaa act ccc aaa	1034
Val Ile Phe Ala Val Leu Leu Phe Phe Ser Ser Leu Glu Thr Pro Lys	
210 215 220	
aat ccg att gct ttt gcg tgt ttt ttt att tgc ctg ata act gat cct	1082
Asn Pro Ile Ala Phe Ala Cys Phe Phe Ile Cys Leu Ile Thr Asp Pro	
225 230 235	
ttc ctt gac att tat ttt agt gga ctt tca gta act gaa aga tgg aaa	1130
Phe Leu Asp Ile Tyr Phe Ser Gly Leu Ser Val Thr Glu Arg Trp Lys	
240 245 250	
ccc ttt ttg tac cgt gga aga att tgc aga aga ctt tca gtc gtt ttt	1178
Pro Phe Leu Tyr Arg Gly Arg Ile Cys Arg Arg Leu Ser Val Val Phe	
255 260 265	
gct gga atg att gag ctt aca ttt ttt att ctt tcc gca ttc aaa ctt	1226
Ala Gly Met Ile Glu Leu Thr Phe Phe Ile Leu Ser Ala Phe Lys Leu	
270 275 280 285	
aga gac act cac ctc tgg tat ttt gta ata cct ggc ttt tcc att ttt	1274
Arg Asp Thr His Leu Trp Tyr Phe Val Ile Pro Gly Phe Ser Ile Phe	
290 295 300	
gga att ttc tgg atg att tgt cat att att ttt ctt tta act ctt tgg	1322
Gly Ile Phe Trp Met Ile Cys His Ile Ile Phe Leu Leu Thr Leu Trp	
305 310 315	
gga ttc cat acc aaa tta aat gac tgc cat aaa gta tat ttt act cac	1370
Gly Phe His Thr Lys Leu Asn Asp Cys His Lys Val Tyr Phe Thr His	
320 325 330	
agg aca gat tac aat agc ctt gat aga atc atg gca tcc aaa ggg atg	1418
Arg Thr Asp Tyr Asn Ser Leu Asp Arg Ile Met Ala Ser Lys Gly Met	
335 340 345	
cgc cat ttt tgc ttg att tca gag cag ttg gtg ttc ttt agt ctt ctt	1466
Arg His Phe Cys Leu Ile Ser Glu Gln Leu Val Phe Phe Ser Leu Leu	
350 355 360 365	
gca aca gcg att ttg gga gca gtt tcc tgg cag cca aca aat gga att	1514

Ala	Thr	Ala	Ile	Leu	Gly	Ala	Val	Ser	Trp	Gln	Pro	Thr	Asn	Gly	Ile	
				370					375					380		
ttc	ttg	agc	atg	ttt	cta	atc	gtt	ttg	cca	ttg	gaa	tcc	atg	gct	cat	1562
Phe	Leu	Ser	Met	Phe	Leu	Ile	Val	Leu	Pro	Leu	Glu	Ser	Met	Ala	His	
			385					390					395			
ggg	ctc	ttc	cat	gaa	ttg	ggt	aac	tgt	tta	gga	gga	aca	tct	gtt	gga	1610
Gly	Leu	Phe	His	Glu	Leu	Gly	Asn	Cys	Leu	Gly	Gly	Thr	Ser	Val	Gly	
		400					405					410				
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Tyr	Ala	Ile	Val	Ile	Pro	Thr	Asn	Phe	Cys	Ser	Pro	Asp	Gly	Gln	Pro	
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Thr	Leu	Leu	Pro	Pro	Glu	His	Val	Gln	Glu	Leu	Asn	Leu	Arg	Ser	Thr	
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His	Ser	Lys	Leu	Lys	Ala	Phe	Leu	Glu	Leu	Arg	Thr	Val	Asp	Gly	Pro	
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aaa	att	aat	gac	cag	tat	att	gca	gtg	caa	gga	gca	gag	ttg	ata	aaa	2090
Lys	Ile	Asn	Asp	Gln	Tyr	Ile	Ala	Val	Gln	Gly	Ala	Glu	Leu	Ile	Lys	
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Thr	Val	Asp	Ile	Glu	Glu	Ala	Asp	Pro	Pro	Gln						

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tgg agt gac tac act ctg cat ttg cca acg gga agc gat gtg gcc aag 2282
 Trp Ser Asp Tyr Thr Leu His Leu Pro Thr Gly Ser Asp Val Ala Lys
 625 630 635

cac tgg atg tta cac ttt cct cgt att aca tat ccc cta gtg cat ttg 2330
 His Trp Met Leu His Phe Pro Arg Ile Thr Tyr Pro Leu Val His Leu
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gca aat tgg tta tgc ggt ctg aac ctt ttt tgg atc tgc aaa act tgt 2378
 Ala Asn Trp Leu Cys Gly Leu Asn Leu Phe Trp Ile Cys Lys Thr Cys
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 Phe Arg Cys Leu Lys Arg Leu Lys Met Ser Trp Phe Leu Pro Thr Val
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 690 695

cccaaagcgg gatattaata agcactcata ctaccaatta tcactaactt gccatttttt 2532

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Lys Glu Glu Ser Thr Lys Tyr Leu Leu Leu Thr Ser Ile Val Leu Arg
 35 40 45
 Ile Leu Cys Ser Leu Val Glu Arg Ile Ser Gly Tyr Val Arg His Arg
 50 55 60
 Pro Thr Leu Leu Thr Thr Val Glu Phe Leu Glu Leu Val Gly Phe Ala
 65 70 75 80
 Ile Ala Ser Thr Thr Met Leu Val Glu Lys Ser Leu Ser Val Ile Leu
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 Leu Val Val Ala Leu Ala Met Leu Ile Ile Asp Leu Arg Met Lys Ser
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 Ser Val Thr Glu Arg Trp Lys Pro Phe Leu Tyr Arg Gly Arg Ile Cys
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 Ile Leu Ser Ala Phe Lys Leu Arg Asp Thr His Leu Trp Tyr Phe Val
 195 200 205
 Ile Pro Gly Phe Ser Ile Phe Gly Ile Phe Trp Met Ile Cys His Ile
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 225 230 235 240
 His Lys Val Tyr Phe Thr His Arg Thr Asp Tyr Asn Ser Leu Asp Arg
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 260 265 270
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 Trp Gln Pro Thr Asn Gly Ile Phe Leu Ser Met Phe Leu Ile Val Leu
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 325 330 335

Cys Ser Pro Asp Gly Gln Pro Thr Leu Leu Pro Pro Glu His Val Gln
340 345 350

Glu Leu Asn Leu Arg Ser Thr Gly Met Leu Asn Ala Ile Gln Arg Phe
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Phe Ala Tyr His Met Ile Glu Thr Tyr Gly Cys Asp Tyr Ser Thr Ser
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Gly Leu Ser Phe Asp Thr Leu His Ser Lys Leu Lys Ala Phe Leu Glu
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420 425 430

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Ser Phe Cys Ser Arg Leu Ile Ile Val Leu Asp Ser Glu Asn Ser Thr
450 455 460

Pro Trp Val Lys Glu Val Arg Lys Ile Asn Asp Gln Tyr Ile Ala Val
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Gln Gly Ala Glu Leu Ile Lys Thr Val Asp Ile Glu Glu Ala Asp Pro
485 490 495

Pro Gln Leu Gly Asp Phe Thr Lys Asp Trp Val Glu Tyr Asn Cys Asn
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Ser Ser Asn Asn Ile Cys Trp Thr Glu Lys Gly Arg Thr Val Lys Ala
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Val Tyr Gly Val Ser Lys Arg Trp Ser Asp Tyr Thr Leu His Leu Pro
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Thr Gly Ser Asp Val Ala Lys His Trp Met Leu His Phe Pro Arg Ile
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Phe Trp Ile Cys Lys Thr Cys Phe Arg Cys Leu Lys Arg Leu Lys Met
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Ser Asn Leu Trp Phe Gly Phe Leu Leu Gly Leu Leu Cys Phe Leu Asp
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Asn Ser Ser Phe Lys Asn Asp Val Lys Glu Glu Ser Thr Lys Tyr Leu
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ctt cta aca tcc ata gtg tta agg ata ttg tgc tct ctg gtg gag aga 796
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Ile Ser Gly Tyr Val Arg His Arg Pro Thr Leu Leu Thr Thr Val Glu
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Phe Leu Glu Leu Val Gly Phe Ala Ile Ala Ser Thr Thr Met Leu Val
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gag aag tct ctg agt gtc att ttg ctt gtt gta gct ctg gct atg ctg 940
Glu Lys Ser Leu Ser Val Ile Leu Leu Val Val Ala Leu Ala Met Leu
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ccg Pro	att Ile	gct Ala	ttt Phe 140	gcg Ala	tgt Cys	ttt Phe	ttt Phe	att Ile 145	tgc Cys	ctg Leu	ata Ile	act Thr	gat Asp 150	cct Pro	ttc Phe	1084
ctt Leu	gac Asp	att Ile 155	tat Tyr	ttt Phe	agt Ser	gga Gly	ctt Leu 160	tca Ser	gta Val	act Thr	gaa Glu	aga Arg 165	tgg Trp	aaa Lys	ccc Pro	1132
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ttc Phe	cat His	acc Thr 235	aaa Lys	tta Leu	aat Asn	gac Asp	tgc Cys 240	cat His	aaa Lys	gta Val	tat Tyr	ttt Phe 245	act Thr	cac His	agg Arg	1372
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cat His 265	ttt Phe	tgc Cys	ttg Leu	att Ile 270	tca Ser	gag Glu	cag Gln	ttg Leu	gtg Val	ttc Phe 275	ttt Phe	agt Ser	ctt Leu	ctt Leu 280	gca Ala	1468
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ctc Leu	ttc Phe	cat His 315	gaa Glu	ttg Leu	ggt Gly	aac Asn	tgt Cys 320	tta Leu	gga Gly	gga Gly	aca Thr	tct Ser 325	gtt Val	gga Gly	tat Tyr	1612
gct Ala	att Ile	gtg Val	att Ile	ccc Pro	acc Thr	aac Asn	ttc Phe	tgc Cys	agt Ser	cct Pro	gat Asp	ggg Gly	cag Gln	cca Pro	aca Thr	1660

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Glu Asp Gly Glu Ser Leu Glu Phe Phe Glu Thr Gln Phe Ile Leu Ser		
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Pro Arg Ser Leu Leu Gln Glu Asn Asn Trp Pro Pro His Arg Pro Ile		
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 Met Thr Ser Phe
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 gaa gat gct gac aca gaa gag aca gta act tgt ctc cag atg acg gtt 344
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 Tyr His Pro Gly Gln Leu Gln Cys Gly Ile Phe Gln Ser Ile Ser Phe
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 Ser Asn Ile Cys His Tyr Thr Phe Gln Asp Lys Gln Val Ser Arg Val
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 cag ttt tct ctg cag ctg ttt aaa aaa ttc aac agc tca gtt ctc tcc 536

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Phe Glu Ile Lys Asn Met Ser Lys Lys Thr Asn Leu Ile Val Asp Ser																
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aga gag ctg ggc tac cta aat aaa atg gac ctg cca tac agg tgc atg	632															
Arg Glu Leu Gly Tyr Leu Asn Lys Met Asp Leu Pro Tyr Arg Cys Met																
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cga aca gag gcg gca gag acc acc ccg atg tgg cag gcc ctg aag ctg Arg Thr Glu Ala Ala Glu Thr Thr Pro Met Trp Gln Ala Leu Lys Leu	100	105	110	454
ctc ttc tgt gcc aca ggg ctc cag gtg tct tat ctg act tgg ggt gtg Leu Phe Cys Ala Thr Gly Leu Gln Val Ser Tyr Leu Thr Trp Gly Val	115	120	125	502
ctg cag gaa aga gtg atg acc cgc agc tat ggg gcc aca gcc aca tca Leu Gln Glu Arg Val Met Thr Arg Ser Tyr Gly Ala Thr Ala Thr Ser	130	135	140	550
ccg ggt gag cgc ttt acg gac tcg cag ttc ctg gtg cta atg aac cga Pro Gly Glu Arg Phe Thr Asp Ser Gln Phe Leu Val Leu Met Asn Arg	145	150	155	598
gtg ctg gca ctg att gtg gct ggc ctc tcc tgt gtt ctc tgc aag cag Val Leu Ala Leu Ile Val Ala Gly Leu Ser Cys Val Leu Cys Lys Gln	165	170	175	646
ccc cgg cat ggg gca ccc atg tac cgg tac tcc ttt gcc agc ctg tcc Pro Arg His Gly Ala Pro Met Tyr Arg Tyr Ser Phe Ala Ser Leu Ser	180	185	190	694
aat gtg ctt agc agc tgg tgc caa tac gaa gct ctt aag ttc gtc agc Asn Val Leu Ser Ser Trp Cys Gln Tyr Glu Ala Leu Lys Phe Val Ser	195	200	205	742
ttc ccc acc cag gtg ctg gcc aag gcc tct aag gtg atc cct gtc atg Phe Pro Thr Gln Val Leu Ala Lys Ala Ser Lys Val Ile Pro Val Met	210	215	220	790
ctg atg gga aag ctt gtg tct cgg cgc agc tac gaa cac tgg gag tac Leu Met Gly Lys Leu Val Ser Arg Arg Ser Tyr Glu His Trp Glu Tyr	225	230	235	838
ctg aca gcc acc ctc atc tcc att ggg gtc agc atg ttt ctg cta tcc Leu Thr Ala Thr Leu Ile Ser Ile Gly Val Ser Met Phe Leu Leu Ser	245	250	255	886
agc gga cca gag ccc cgc agc tcc cca gcc acc aca ctc tca ggc ctc Ser Gly Pro Glu Pro Arg Ser Ser Pro Ala Thr Thr Leu Ser Gly Leu	260	265	270	934
ttc aca gtg ggc tca ctg cta gaa cag ggg gcc cta ctg gag gga acc Phe Thr Val Gly Ser Leu Leu Glu Gln Gly Ala Leu Leu Glu Gly Thr	275	280	285	982
cgc ttc atg ggg cga cac agt gag ttt gct gcc cat gcc ctg cta ctc Arg Phe Met Gly Arg His Ser Glu Phe Ala Ala His Ala Leu Leu Leu	290	295	300	1030

Gln Leu Trp Phe Phe Arg Phe Val Val Asn Ala Ala Gly Tyr Ala Ser
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Phe Met Val Pro Gly Tyr Leu Leu Val Gln Tyr Phe Arg Arg Lys Asn
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Tyr Leu Glu Thr Gly Arg Gly Leu Cys Phe Pro Leu Val Lys Ala Cys
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Val Phe Gly Asn Glu Pro Lys Ala Ser Asp Glu Val Pro Leu Ala Pro
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115 120 125

Leu Gln Glu Arg Val Met Thr Arg Ser Tyr Gly Ala Thr Ala Thr Ser
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Pro Gly Glu Arg Phe Thr Asp Ser Gln Phe Leu Val Leu Met Asn Arg
145 150 155 160

Val Leu Ala Leu Ile Val Ala Gly Leu Ser Cys Val Leu Cys Lys Gln
165 170 175

Pro Arg His Gly Ala Pro Met Tyr Arg Tyr Ser Phe Ala Ser Leu Ser
180 185 190

Asn Val Leu Ser Ser Trp Cys Gln Tyr Glu Ala Leu Lys Phe Val Ser
195 200 205

Phe Pro Thr Gln Val Leu Ala Lys Ala Ser Lys Val Ile Pro Val Met
210 215 220

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225 230 235 240

Leu Thr Ala Thr Leu Ile Ser Ile Gly Val Ser Met Phe Leu Leu Ser
245 250 255

Ser Gly Pro Glu Pro Arg Ser Ser Pro Ala Thr Thr Leu Ser Gly Leu
260 265 270

Ile Leu Leu Ala Gly Tyr Ile Ala Phe Asp Ser Phe Thr Ser Asn Trp
275 280 285

Gln Asp Ala Leu Phe Ala Tyr Lys Met Ser Ser Val Gln Met Met Phe
290 295 300

Gly Val Asn Phe Phe Ser Cys Leu Phe Thr Val Gly Ser Leu Leu Glu
305 310 315 320

Gln Gly Ala Leu Leu Glu Gly Thr Arg Phe Met Gly Arg His Ser Glu
325 330 335

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Gln Gly Ala Leu Leu Glu Gly Thr Arg Phe Met Gly Arg His Ser Glu
325 330 335

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Phe Ala Ala His Ala Leu Leu Leu Ser Ile Cys Ser Ala Cys Gly Gln
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Leu Phe Ile Phe Tyr Thr Ile Gly Gln Phe Gly Ala Ala Val Phe Thr
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Ile Ile Met Thr Leu Arg Gln Ala Phe Ala Ile Leu Leu Ser Cys Leu
370 375 380

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Leu Tyr Gly His Thr Val Thr Val Val Gly Gly Leu Gly Val Ala Val
385 390 395 400

gtc ttt gct gcc ctc ctg ctc aga gtc tac gcg cgg ggc cgt cta aag 1366
Val Phe Ala Ala Leu Leu Leu Arg Val Tyr Ala Arg Gly Arg Leu Lys
405 410 415

caa cgg gga aag aag gct gtg cct gtt gag tct cct gtg cag aag gtt 1414
Gln Arg Gly Lys Lys Ala Val Pro Val Glu Ser Pro Val Gln Lys Val
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ctgc 2018

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<213> Homo sapiens

<400> 87

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Ile Gly Lys Ser Lys Ile Asn Ser Cys Pro Leu Ser Leu Ser Trp Gly	
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aaa agg cac agt gtg gat aca agt cca gga tat cat gag tca gat tcc	212
Lys Arg His Ser Val Asp Thr Ser Pro Gly Tyr His Glu Ser Asp Ser	
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aag aag tct gaa gat cta tcc ttg tgt aat gtt gct gag cac agc aat	260
Lys Lys Ser Glu Asp Leu Ser Leu Cys Asn Val Ala Glu His Ser Asn	
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aca aca gag ggg cca aca gga aag cag gag gga gct cag agc gtg gaa	308
Thr Thr Glu Gly Pro Thr Gly Lys Gln Glu Gly Ala Gln Ser Val Glu	
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gag atg ttt gaa gaa gaa gct gaa gaa gag gtg ttc ctc aaa ttt gtg	356
Glu Met Phe Glu Glu Glu Ala Glu Glu Glu Val Phe Leu Lys Phe Val	
70 75 80	
ata ttg cat gca gaa gat gac aca gat gaa gcc ctc aga gtc cag aat	404
Ile Leu His Ala Glu Asp Asp Thr Asp Glu Ala Leu Arg Val Gln Asn	
85 90 95	
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Leu Leu Gln Asp Asp Phe Gly Ile Lys Pro Gly Ile Ile Phe Ala Glu	
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Met Pro Cys Gly Arg Gln His Leu Gln Asn Leu Asp Asp Ala Val Asn	
115 120 125 130	
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Gly Ser Ala Trp Thr Ile Leu Leu Leu Thr Glu Asn Phe Leu Arg Asp	
135 140 145	
act tgg tgt aat ttc cag ttc tat acg tcc cta atg aac tcc gtt aac	596
Thr Trp Cys Asn Phe Gln Phe Tyr Thr Ser Leu Met Asn Ser Val Asn	
150 155 160	
agg cag cat aaa tac aac tct gtt ata ccc atg cgg ccc ctg aac aat	644
Arg Gln His Lys Tyr Asn Ser Val Ile Pro Met Arg Pro Leu Asn Asn	
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Ala Leu Lys Gln Tyr Asn Ser Thr Gly Asp Tyr Arg Ser His Ala Val
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Asp Lys Ile Gln Asn Thr Leu His Cys Cys Gly Val Thr Asp Tyr Arg
145 150 155 160

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Asp Trp Thr Asp Thr Asn Tyr Tyr Ser Glu Lys Gly Phe Pro Lys Ser
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Cys Cys Lys Leu Glu Asp Cys Thr Pro Gln Arg Asp Ala Asp Lys Val
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Asn Asn Glu Gly Cys Phe Ile Lys Val Met Thr Ile Ile Glu Ser Glu
195 200 205

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210 215 220

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225 230 235 240

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Gln Tyr Glu Ile Val
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 Asn Ser Glu Ala Cys Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg
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 Asn Val Thr His Leu Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly
 65 70 75 80
 Phe Gln Asp Val Glu Ala Gln Ala Ala Thr Cys Asn His Thr Val Met
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 Ala Leu Met Ala Ser Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Lys
 100 105 110
 Val Glu Glu Leu Glu Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln
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 Asp Ala Ser Ala Glu Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu
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 Ser Val Arg Ile Ala Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser
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Arg Val Pro Met Glu Asp Gly Asp Lys Arg Cys Lys Leu Leu Leu Gly
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Ile Gly Ile Leu Val Leu Leu Ile Ile Val Ile Leu Gly Val Pro Leu
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Ile Ile Phe Thr Ile Lys Ala Asn Ser Glu Ala Cys Arg Asp Gly Leu
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cgg gca gtg atg gag tgt cgc aat gtc acc cat ctc ctg caa caa gag 244
Arg Ala Val Met Glu Cys Arg Asn Val Thr His Leu Leu Gln Gln Glu
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ctg acc gag gcc cag aag ggc ttt cag gat gtg gag gcc cag gct gcc 292
Leu Thr Glu Ala Gln Lys Gly Phe Gln Asp Val Glu Ala Gln Ala Ala
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acc tgc aac cac act gtg atg gcc cta atg gct tcc ctg gat gca gag 340
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Thr Leu Asn His Lys Leu Gln Asp Ala Ser Ala Glu Val Glu Arg Leu
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aga aga gaa aac cag gtc tta agc gtg aga atc gcg gac aag aag tac 484
Arg Arg Glu Asn Gln Val Leu Ser Val Arg Ile Ala Asp Lys Lys Tyr
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tac ccc agc tcc cag gac tcc agc tcc gct gcg gcg ccc cag ctg ctg 532
Tyr Pro Ser Ser Gln Asp Ser Ser Ser Ala Ala Ala Pro Gln Leu Leu
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Ile Val Leu Leu Gly Leu Ser Ala Leu Leu Gln
           170           175           180

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Leu Lys Glu Phe Pro Gln Val Lys Arg Lys Ile Gln Glu Ser Ile Glu	
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Lys Leu Arg Ala Leu Ala Asn Gly Ile Glu Glu Val His Arg Gly Cys	
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Met Ser Leu Ala Gly Leu Val Leu Ala Pro Phe Thr Ala Gly Thr Ser	
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Leu Ala Leu Thr Ala Ala Gly Val Gly Leu Gly Ala Ala Ser Ala Val	
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gaa gct gaa gcc agc agg ctg act gca acc agc att gac cga ttg aag	753
Glu Ala Glu Ala Ser Arg Leu Thr Ala Thr Ser Ile Asp Arg Leu Lys	
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Thr Thr Arg Ala Val Ser Arg Gly Ala Arg Ile Leu Ser Ala Thr Thr	
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Ser Gly Ile Phe Leu Ala Leu Asp Val Val Asn Leu Val Tyr Glu Ser	
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Leu	Asp	Thr	Leu	Glu	Thr	Ser	Lys	Arg	Lys	Ser	Leu	Gln	Leu	Leu	Thr
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Pro	Ala	Ser	Pro	Leu	Met	Lys	Asn	Phe	Asp	Thr	Ser	Gln	Trp	Glu	Asp
		275					280					285			
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Thr	Phe	Ile	Ser	Lys	Ile	Pro	Trp	Ser	Phe	Tyr	Lys	Leu	Phe	Leu	Leu
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Val Phe Tyr Trp Glu Gln Val Thr Asp Gly Phe Phe Ile Phe Asn Glu
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Met Glu Leu Leu Glu Glu Asp Leu Thr Cys Pro Ile Cys Cys Ser Leu
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Phe Asp Asp Pro Arg Val Leu Pro Cys Ser His Asn Phe Cys Lys Lys
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Cys Leu Glu Gly Ile Leu Glu Gly Ser Val Arg Asn Ser Leu Trp Arg
35 40 45

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Gly Ile Asn Ser Leu Gln Val Asn Tyr Ser Leu Lys Gly Ile Val Glu
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Lys Tyr Asn Lys Ile Lys Ile Ser Pro Lys Met Pro Val Cys Lys Gly
85 90 95

cac ttg ggg cag cct ctc aac att ttc tgc ctg act gat atg cag ctg 516
His Leu Gly Gln Pro Leu Asn Ile Phe Cys Leu Thr Asp Met Gln Leu
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Cys Ser Ile Glu Asp Ala Tyr Ala Gln Glu Arg Asp Ala Phe Glu Ser	
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Lys Asp Ser Asp Lys Val Lys Glu Phe Phe Glu Lys Leu Gln His Thr	
180 185 190	
ctg gat caa aag aag aat gaa att ctg tct gac ttt gag acc atg aaa	804
Leu Asp Gln Lys Lys Asn Glu Ile Leu Ser Asp Phe Glu Thr Met Lys	
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Leu Ala Val Met Gln Ala Tyr Asp Pro Glu Ile Asn Lys Leu Asn Thr	
210 215 220	
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Ile Leu Gln Glu Gln Arg Met Ala Phe Asn Ile Ala Glu Ala Phe Lys	
225 230 235 240	
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Asp Val Ser Glu Pro Ile Val Phe Leu Gln Gln Met Gln Glu Phe Arg	
245 250 255	
gag aaa atc aaa gta atc aag gaa act cct tta cct ccc tct aat ttg	996
Glu Lys Ile Lys Val Ile Lys Glu Thr Pro Leu Pro Pro Ser Asn Leu	
260 265 270	
cct gca agc cct tta atg aag aac ttt gat acc agt cag tgg gaa gac	1044
Pro Ala Ser Pro Leu Met Lys Asn Phe Asp Thr Ser Gln Trp Glu Asp	
275 280 285	
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Ile Lys Leu Val Asp Val Asp Lys Leu Ser Leu Pro Gln Asp Thr Gly	
290 295 300	
aca ttc att agc aag att ccc tgg agc ttt tat aag tta ttt ttg cta	1140
Thr Phe Ile Ser Lys Ile Pro Trp Ser Phe Tyr Lys Leu Phe Leu Leu	
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Ile Leu Leu Leu Gly Leu Val Ile Val Phe Gly Pro Thr Met Phe Leu	
325 330 335	

Thr Ala Met Arg Ile Thr Lys Trp Lys Glu Lys Val Gln Ile Gln Arg
165 170 175

Gln Lys Ile Arg Ser Asp Phe Lys Asn Leu Gln Cys Phe Leu His Glu
180 185 190

Glu Glu Lys Ser Tyr Leu Trp Arg Leu Glu Lys Glu Glu Gln Gln Thr
195 200 205

Leu Ser Arg Leu Arg Asp Tyr Glu Ala Gly Leu Gly Leu Lys Ser Asn
210 215 220

Glu Leu Lys Ser His Ile Leu Glu Leu Glu Glu Lys Cys Gln Gly Ser
225 230 235 240

Ala Gln Lys Leu Leu Gln Asn Val Asn Asp Thr Leu Ser Arg Ser Trp
245 250 255

Ala Val Lys Leu Glu Thr Ser Glu Ala Val Ser Leu Glu Leu His Thr
260 265 270

Met Cys Asn Val Ser Lys Leu Tyr Phe Asp Val Lys Lys Met Leu Arg
275 280 285

Ser His Gln Val Ser Val Thr Leu Asp Pro Asp Thr Ala His His Glu
290 295 300

Leu Ile Leu Ser Glu Asp Arg Arg Gln Val Thr Arg Gly Tyr Thr Gln
305 310 315 320

Glu Asn Gln Asp Thr Ser Ser Arg Arg Phe Thr Ala Phe Pro Cys Val
325 330 335

Leu Gly Cys Glu Gly Phe Thr Ser Gly Arg Arg Tyr Phe Glu Val Asp
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Val Gly Glu Gly Thr Gly Trp Asp Leu Gly Val Cys Met Glu Asn Val
355 360 365

Gln Arg Gly Thr Gly Met Lys Gln Glu Pro Gln Ser Gly Phe Trp Thr
370 375 380

Leu Arg Leu Cys Lys Lys Lys Gly Tyr Val Ala Leu Thr Ser Pro Pro
385 390 395 400

Thr Ser Leu His Leu His Glu Gln Pro Leu Leu Val Gly Ile Phe Leu
405 410 415

Asp Tyr Glu Ala Gly Val Val Ser Phe Tyr Asn Gly Asn Thr Gly Cys
420 425 430

His Ile Phe Thr Phe Pro Lys Ala Ser Phe Ser Asp Thr Leu Arg Pro
435 440 445

Tyr Phe Gln Val Tyr Gln Tyr Ser Pro Leu Phe Leu Pro Pro Pro Gly
450 455 460

Glu	Gln	Phe	His	Leu	Phe	Cys	Glu	Asp	Glu	Gly	Gln	Leu	Ile	Cys	Trp	
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Arg	Cys	Glu	Arg	Ala	Pro	Gln	His	Lys	Gly	His	Thr	Thr	Ala	Leu	Val	
	115					120					125					
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Glu	Asp	Val	Cys	Gln	Gly	Tyr	Lys	Glu	Lys	Leu	Gln	Glu	Ala	Val	Thr	
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aaa	ctg	aag	caa	ctt	gaa	gac	aga	tgt	acg	gag	cag	aag	ctg	tcc	aca	959
Lys	Leu	Lys	Gln	Leu	Glu	Asp	Arg	Cys	Thr	Glu	Gln	Lys	Leu	Ser	Thr	
				150					155					160		
gca	atg	cga	ata	act	aaa	tgg	aaa	gag	aag	gta	cag	att	cag	aga	caa	1007
Ala	Met	Arg	Ile	Thr	Lys	Trp	Lys	Glu	Lys	Val	Gln	Ile	Gln	Arg	Gln	
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Lys	Ile	Arg	Ser	Asp	Phe	Lys	Asn	Leu	Gln	Cys	Phe	Leu	His	Glu	Glu	
		180					185					190				
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Glu	Lys	Ser	Tyr	Leu	Trp	Arg	Leu	Glu	Lys	Glu	Glu	Gln	Gln	Thr	Leu	
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Ser	Arg	Leu	Arg	Asp	Tyr	Glu	Ala	Gly	Leu	Gly	Leu	Lys	Ser	Asn	Glu	
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Leu	Lys	Ser	His	Ile	Leu	Glu	Leu	Glu	Glu	Lys	Cys	Gln	Gly	Ser	Ala	
				230					235					240		
cag	aaa	ttg	ctg	cag	aat	gtg	aat	gac	act	ttg	agc	agg	agt	tgg	gct	1247
Gln	Lys	Leu	Leu	Gln	Asn	Val	Asn	Asp	Thr	Leu	Ser	Arg	Ser	Trp	Ala	
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gtg	aag	ctg	gaa	aca	tca	gag	gct	gtc	tcc	ttg	gaa	ott	cat	act	atg	1295
Val	Lys	Leu	Glu	Thr	Ser	Glu	Ala	Val	Ser	Leu	Glu	Leu	His	Thr	Met	
		260					265					270				
tgc	aat	gtt	tcc	aag	ctt	tac	ttc	gat	gtg	aag	aaa	atg	tta	agg	agt	1343
Cys	Asn	Val	Ser	Lys	Leu	Tyr	Phe	Asp	Val	Lys	Lys	Met	Leu	Arg	Ser	
	275					280					285					
cat	caa	gtt	agt	gtg	act	ctg	gat	cca	gat	aca	gct	cat	cac	gaa	cta	1391
His	Gln	Val	Ser	Val	Thr	Leu	Asp	Pro	Asp	Thr	Ala	His	His	Glu	Leu	
290					295					300					305	
att	ctc	tct	gag	gat	cgg	aga	caa	gtg	act	cgt	gga	tac	acc	cag	gag	1439
Ile	Leu	Ser	Glu	Asp	Arg	Arg	Gln	Val	Thr	Arg	Gly					

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ggc gaa gga acc gga tgg gat tta gga gtt tgt atg gaa aat gtg cag Gly Glu Gly Thr Gly Trp Asp Leu Gly Val Cys Met Glu Asn Val Gln 355 360 365			1583
agg ggc act ggc atg aag caa gag cct cag tct gga ttc tgg acc ctc Arg Gly Thr Gly Met Lys Gln Glu Pro Gln Ser Gly Phe Trp Thr Leu 370 375 380 385			1631
agg ctg tgc aaa aag aaa ggc tat gta gca ctt act tct ccc cca act Arg Leu Cys Lys Lys Lys Gly Tyr Val Ala Leu Thr Ser Pro Pro Thr 390 395 400			1679
tcc ctt cat ctg cat gag cag ccc ctg ctt gtg gga att ttt ctg gac Ser Leu His Leu His Glu Gln Pro Leu Leu Val Gly Ile Phe Leu Asp 405 410 415			1727
tat gag gcc gga gtt gta tcc ttt tat aac ggg aat act ggc tgc cac Tyr Glu Ala Gly Val Val Ser Phe Tyr Asn Gly Asn Thr Gly Cys His 420 425 430			1775
atc ttt act ttc ccg aag gct tcc ttc tct gat act ctc cgg ccc tat Ile Phe Thr Phe Pro Lys Ala Ser Phe Ser Asp Thr Leu Arg Pro Tyr 435 440 445			1823
ttc cag gtt tat caa tat tct cct ttg ttt ctg cct ccc cca ggt gac Phe Gln Val Tyr Gln Tyr Ser Pro Leu Phe Leu Pro Pro Pro Gly Asp 450 455 460 465			1871
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 His Ser Tyr Cys His Leu Cys Ile Thr Asp Phe Phe Lys Asn Pro Ser
 35 40 45
 Gln Lys Gln Leu Arg Gln Glu Thr Phe Cys Cys Pro Gln Cys Arg Ala
 50 55 60

Pro	Phe	His	Met	Asp	Ser	Leu	Arg	Pro	Asn	Lys	Gln	Leu	Gly	Ser	Leu	65	70	75	80
Ile	Glu	Ala	Leu	Lys	Glu	Thr	Asp	Gln	Glu	Met	Ser	Cys	Glu	Glu	His	85	90	95	
Gly	Glu	Gln	Phe	His	Leu	Phe	Cys	Glu	Asp	Glu	Gly	Gln	Leu	Ile	Cys	100	105	110	
Trp	Arg	Cys	Glu	Arg	Ala	Pro	Gln	His	Lys	Gly	His	Thr	Thr	Ala	Leu	115	120	125	
Val	Glu	Asp	Val	Cys	Gln	Gly	Tyr	Lys	Glu	Lys	Leu	Gln	Lys	Ala	Val	130	135	140	
Thr	Lys	Leu	Lys	Gln	Leu	Glu	Asp	Arg	Cys	Thr	Glu	Gln	Lys	Leu	Ser	145	150	155	160
Thr	Ala	Met	Arg	Ile	Thr	Lys	Trp	Lys	Glu	Lys	Val	Gln	Ile	Gln	Arg	165	170	175	
Gln	Lys	Ile	Arg	Ser	Asp	Phe	Lys	Asn	Leu	Gln	Cys	Phe	Leu	His	Glu	180	185	190	
Glu	Glu	Lys	Ser	Tyr	Leu	Trp	Arg	Leu	Glu	Lys	Glu	Glu	Gln	Gln	Thr	195	200	205	
Leu	Ser	Arg	Leu	Arg	Asp	Tyr	Glu	Ala	Gly	Leu	Gly	Leu	Lys	Ser	Asn	210	215	220	
Glu	Leu	Lys	Ser	His	Ile	Leu	Glu	Leu	Glu	Glu	Lys	Cys	Gln	Gly	Ser	225	230	235	240
Ala	Gln	Lys	Leu	Leu	Gln	Asn	Val	Asn	Asp	Thr	Leu	Ser	Arg	Ser	Trp	245	250	255	
Ala	Val	Lys	Leu	Glu	Thr	Ser	Glu	Ala	Val	Ser	Leu	Glu	Leu	His	Thr	260	265	270	
Met	Cys	Asn	Val	Ser	Lys	Leu	Tyr	Phe	Asp	Val	Lys	Lys	Met	Leu	Arg	275	280	285	
Ser	His	Gln	Val	Ser	Val	Thr	Leu	Asp	Pro	Asp	Thr	Ala	His	His	Glu	290	295	300	
Leu	Ile	Leu	Ser	Glu	Asp	Arg	Arg	Gln	Val	Thr	Arg	Gly	Tyr	Thr	Gln	305	310	315	320
Glu	Asn	Gln	Asp	Thr	Ser	Ser	Arg	Arg	Phe	Thr	Ala	Phe	Pro	Cys	Val	325	330	335	
Leu	Gly	Cys	Glu	Gly	Phe	Thr	Ser	Gly	Arg	Arg	Tyr	Phe	Glu	Val	Asp	340	345	350	
Val	Gly	Glu	Gly	Thr	Gly	Trp	Asp	Leu	Gly	Val	Cys	Met	Glu	Asn	Val	355	360	365	

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Ser	Tyr	Cys	His	Leu	Cys	Ile	Thr	Asp	Phe	Phe	Lys	Asn	Pro	Ser	Gln	
	35					40					45					
aag	caa	ctg	agg	cag	gag	aca	ttc	tgc	tgt	ccc	cag	tgt	cgg	gct	cca	671
Lys	Gln	Leu	Arg	Gln	Glu	Thr	Phe	Cys	Cys	Pro	Gln	Cys	Arg	Ala	Pro	
	50				55					60					65	
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Phe	His	Met	Asp	Ser	Leu	Arg	Pro	Asn	Lys	Gln	Leu	Gly	Ser	Leu	Ile	
				70					75					80		
gaa	gcc	ctc	aaa	gag	acg	gat	caa	gaa	atg	tca	tgt	gag	gaa	cac	gga	767
Glu	Ala	Leu	Lys	Glu	Thr	Asp	Gln	Glu	Met	Ser	Cys	Glu	Glu	His	Gly	
			85					90					95			
gag	cag	ttc	cac	ctg	ttc	tgc	gaa	gac	gag	ggg	cag	ctc	atc	tgc	tgg	815
Glu	Gln	Phe	His	Leu	Phe	Cys	Glu	Asp	Glu	Gly	Gln	Leu	Ile	Cys	Trp	
		100					105					110				
cgc	tgt	gag	cgg	gca	cca	cag	cac	aaa	ggg	cac	acc	aca	gct	ctt	gtt	863
Arg	Cys	Glu	Arg	Ala	Pro	Gln	His	Lys	Gly	His	Thr	Thr	Ala	Leu	Val	
	115					120					125					
gaa	gac	gta	tgc	cag	ggc	tac	aag	gaa	aag	ctc	cag	aaa	gct	gtg	aca	911
Glu	Asp	Val	Cys	Gln	Gly	Tyr	Lys	Glu	Lys	Leu	Gln	Lys	Ala	Val	Thr	
130					135					140					145	
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Lys	Leu	Lys	Gln	Leu	Glu	Asp	Arg	Cys	Thr	Glu	Gln	Lys	Leu	Ser	Thr	
				150					155					160		
gca	atg	cga	ata	act	aaa	tgg	aaa	gag	aag	gta	cag	att	cag	aga	caa	1007
Ala	Met	Arg	Ile	Thr	Lys	Trp	Lys	Glu	Lys	Val	Gln	Ile	Gln	Arg	Gln	
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aaa	atc	cgg	tct	gac	ttt	aag	aat	ctc	cag	tgt	ttc	cta	cat	gag	gaa	1055
Lys	Ile	Arg	Ser	Asp	Phe	Lys	Asn	Leu	Gln	Cys	Phe	Leu	His	Glu	Glu	
		180					185					190				
gag	aag	tct	tat	ctc	tgg	agg	ctg	gag	aaa	gaa	gaa	caa	cag	act	ctg	1103
Glu	Lys	Ser	Tyr	Leu	Trp	Arg	Leu	Glu	Lys	Glu	Glu	Gln	Gln	Thr	Leu	
	195					200					205					
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Ser	Arg	Leu	Arg	Asp	Tyr	Glu	Ala	Gly	Leu	Gly	Leu	Lys	Ser	Asn	Glu	
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ctc	aag	agc	cac	atc	ctg	gaa	ctg	gag	gaa	aaa	tgt	cag	ggc	tca	gcc	1199
Leu	Lys	Ser	His	Ile	Leu	Glu	Leu	Glu	Glu	Lys	Cys	Gln	Gly	Ser	Ala	
				230					235					240		
cag	aaa															

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Val Lys Leu Glu Thr Ser Glu Ala Val Ser Leu Glu Leu His Thr Met
260 265 270

tgc aat gtt tcc aag ctt tac ttc gat gtg aag aaa atg tta agg agt 1343
Cys Asn Val Ser Lys Leu Tyr Phe Asp Val Lys Lys Met Leu Arg Ser
275 280 285

cat caa gtt agt gtg act ctg gat cca gat aca gct cat cac gaa cta 1391
His Gln Val Ser Val Thr Leu Asp Pro Asp Thr Ala His His Glu Leu
290 295 300 305

att ctc tct gag gat cgg aga caa gtg act cgt gga tac acc cag gag 1439
Ile Leu Ser Glu Asp Arg Arg Gln Val Thr Arg Gly Tyr Thr Gln Glu
310 315 320

aat cag gac aca tct tcc agg aga ttt act gcc ttc ccc tgt gtc ttg 1487
Asn Gln Asp Thr Ser Ser Arg Arg Phe Thr Ala Phe Pro Cys Val Leu
325 330 335

ggt tgt gaa ggc ttc acc tca gga aga cgt tac ttt gaa gtg gat gtt 1535
Gly Cys Glu Gly Phe Thr Ser Gly Arg Arg Tyr Phe Glu Val Asp Val
340 345 350

ggc gaa gga acc gga tgg gat tta gga gtt tgt atg gaa aat gtg cag 1583
Gly Glu Gly Thr Gly Trp Asp Leu Gly Val Cys Met Glu Asn Val Gln
355 360 365

agg ggc act ggc atg aag caa gag cct cag tct gga ttc tgg acc ctc 1631
Arg Gly Thr Gly Met Lys Gln Glu Pro Gln Ser Gly Phe Trp Thr Leu
370 375 380 385

agg ctg tgc aaa aag aaa ggc tat gta gca ctt act tct ccc cca act 1679
Arg Leu Cys Lys Lys Lys Gly Tyr Val Ala Leu Thr Ser Pro Pro Thr
390 395 400

tcc ctt cat ctg cat gag cag ccc ctg ctt gtg gga att ttt ctg gac 1727
Ser Leu His Leu His Glu Gln Pro Leu Leu Val Gly Ile Phe Leu Asp
405 410 415

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Tyr Glu Ala Gly Val Val Ser Phe Tyr Asn Gly Asn Thr Gly Cys His
420 425 430

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Ile Phe Thr Phe Pro Lys Ala Ser Phe Ser Asp Thr Leu Arg Pro Tyr
435 440 445

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Phe Gln Val Tyr Gln Tyr Ser Pro Leu Phe Leu Pro Pro Pro Gly Asp
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			20					25					30			
Lys	Arg	Pro	Pro	Gln	Pro	Pro	Glu	Glu	Ser	Gln	Pro	Pro	Gln	Ser	Gln	
		35					40					45				
Ala	Gln	Val	Pro	Pro	Ala	Ala	Pro	His	His	His	His	His	His	Ser	His	
	50					55						60				
Ser	Gly	Pro	Glu	Ile	Ser	Arg	Ile	Ile	Val	Asp	Pro	Thr	Thr	Gly	Lys	
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Arg	Tyr	Cys	Arg	Gly	Lys	Val	Leu	Gly	Lys	Gly	Gly	Phe	Ala	Lys	Cys	
				85					90					95		
Tyr	Glu	Met	Thr	Asp	Leu	Thr	Asn	Asn	Lys	Val	Tyr	Ala	Ala	Lys	Ile	
			100					105					110			
Ile	Pro	His	Ser	Arg	Val	Ala	Lys	Pro	His	Gln	Arg	Glu	Lys	Ile	Asp	
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Lys	Glu	Ile	Glu	Leu	His	Arg	Ile	Leu	His	His	Lys	His	Val	Val	Gln	
	130					135					140					
Phe	Tyr	His	Tyr	Phe	Glu	Asp	Lys	Glu	Asn	Ile	Tyr	Ile	Leu	Leu	Glu	
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Leu	Thr	Glu	Pro	Glu	Val	Arg	Tyr	Tyr	Leu	Arg	Gln	Ile	Val	Ser	Gly	
			180					185					190			
Leu	Lys	Tyr	Leu	His	Glu	Gln	Glu	Ile	Leu	His	Arg	Asp	Leu	Lys	Leu	
		195					200					205				
Gly	Asn	Phe	Phe	Ile	Asn	Glu	Ala	Met	Glu	Leu	Lys	Val	Gly	Asp	Phe	
	210					215					220					
Gly	Leu	Ala	Ala	Arg	Leu	Glu	Pro	Leu	Glu	His	Arg	Arg	Arg	Thr	Ile	
225					230					235					240	
Cys	Gly	Thr	Pro	Asn	Tyr	Leu	Ser	Pro	Glu	Val	Leu	Asn	Lys	Gln	Gly	
				245					250					255		
His	Gly	Cys	Glu	Ser	Asp	Ile	Trp	Ala	Leu	Gly	Cys	Val	Met	Tyr	Thr	
			260					265					270			

Met Leu Leu Gly Arg Pro Pro Phe Glu Thr Thr Asn Leu Lys Glu Thr
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 Tyr Arg Cys Ile Arg Glu Ala Arg Tyr Thr Met Pro Ser Ser Leu Leu
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 Ala Pro Ala Lys His Leu Ile Ala Ser Met Leu Ser Lys Asn Pro Glu
 305 310 315 320
 Asp Arg Pro Ser Leu Asp Asp Ile Ile Arg His Asp Phe Phe Leu Gln
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 Gly Phe Thr Pro Asp Arg Leu Ser Ser Ser Cys Cys His Thr Val Pro
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 Asp Phe His Leu Ser Ser Pro Ala Lys Asn Phe Phe Lys Lys Ala Ala
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 His Asn Arg Val Ser Lys Glu Asp Glu Asp Ile Tyr Lys Leu Arg His
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 Asp Leu Lys Lys Thr Ser Ile Thr Gln Gln Pro Ser Lys His Arg Thr
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 Pro Ala Val Glu Asn Lys Gln Gln Ile Gly Asp Ala Ile Arg Met Ile
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 Val Arg Gly Thr Leu Gly Ser Cys Ser Ser Ser Ser Glu Cys Leu Glu
 450 455 460
 Asp Ser Thr Met Gly Ser Val Ala Asp Thr Val Ala Arg Val Leu Arg
 465 470 475 480
 Gly Cys Leu Glu Asn Met Pro Glu Ala Asp Cys Ile Pro Lys Glu Gln
 485 490 495
 Leu Ser Thr Ser Phe Gln Trp Val Thr Lys Trp Val Asp Tyr Ser Asn
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 Lys Tyr Gly Phe Gly Tyr Gln Leu Ser Asp His Thr Val Gly Val Leu
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 Phe Asn Asn Gly Ala His Met Ser Leu Leu Pro Asp Lys Lys Thr Val
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 His Tyr Tyr Ala Glu Leu Gly Gln Cys Ser Val Phe Pro Ala Thr Asp
 545 550 555 560
 Ala Pro Glu Gln Phe Ile Ser Gln Val Thr Val Leu Lys Tyr Phe Ser
 565 570 575

His	Tyr	Met	Glu	Glu	Asn	Leu	Met	Asp	Gly	Gly	Asp	Leu	Pro	Ser	Val
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Thr	Asp	Ile	Arg	Arg	Pro	Arg	Leu	Tyr	Leu	Leu	Gln	Trp	Leu	Lys	Ser
		595					600					605			
Asp	Lys	Ala	Leu	Met	Met	Leu	Phe	Asn	Asp	Gly	Thr	Phe	Gln	Val	Asn
	610					615					620				
Phe	Tyr	His	Asp	His	Thr	Lys	Ile	Ile	Ile	Cys	Ser	Gln	Asn	Glu	Glu
625					630					635					640
Tyr	Leu	Leu	Thr	Tyr	Ile	Asn	Glu	Asp	Arg	Ile	Ser	Thr	Thr	Phe	Arg
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Leu	Thr	Thr	Leu	Leu	Met	Ser	Gly	Cys	Ser	Ser	Glu	Leu	Lys	Asn	Arg
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Met	Glu	Tyr	Ala	Leu	Asn	Met	Leu	Leu	Gln	Arg	Cys	Asn			
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<222> (128)..(2182)
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      Met Glu Leu Leu Arg Thr Ile Thr Tyr Gln Pro Ala Ala Ser
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acc aaa atg tgc gag cag gcg ctg ggc aag ggt tgc gga gca gac tcg 217
Thr Lys Met Cys Glu Gln Ala Leu Gly Lys Gly Cys Gly Ala Asp Ser
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Lys Lys Lys Arg Pro Pro Gln Pro Pro Glu Glu Ser Gln Pro Pro Gln
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tcc cag gcg caa gtg ccc ccg gcg gcc cct cac cac cat cac cac cat 313
Ser Gln Ala Gln Val Pro Pro Ala Ala Pro His His His His His His
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tcg cac tcg ggg ccg gag atc tcg cgg att atc gtc gac ccc acg act 361
Ser His Ser Gly Pro Glu Ile Ser Arg Ile Ile Val Asp Pro Thr Thr
      65              70              75
ggg aag cgc tac tgc ccg gcc aaa gtg ctg gga aag qgt qgc ttt qca 409

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Lys	Cys	Tyr	Glu	Met	Thr	Asp	Leu	Thr	Asn	Asn	Lys	Val	Tyr	Ala	Ala		
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Asp	Phe	Gly	Leu	Ala	Ala	Arg	Leu	Glu	Pro	Leu	Glu	His	Arg	Arg	Arg		
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Thr	Ile	Cys	Gly	Thr	Pro	Asn	Tyr	Leu	Ser	Pro	Glu	Val	Leu	Asn	Lys		
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tat	aca	atg	tta	cta	ggg	agg	ccc	cca	ttt	gaa	act	aca	aat	ctc	aaa	985	
Tyr	Thr	Met	Leu	Leu	Gly	Arg	Pro	Pro	Phe	Glu	Thr	Thr	Asn	Ile	Lys		
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Pro	Glu	Asp	Arg	Pro	Ser	Leu	Asp	Asp	Ile	Ile	Arg	His	Asp	Phe	Phe	
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Val	Pro	Asp	Phe	His	Leu	Ser	Ser	Pro	Ala	Lys	Asn	Phe	Phe	Lys	Lys	
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Asp	Thr	His	Asn	Arg	Val	Ser	Lys	Glu	Asp	Glu	Asp	Ile	Tyr	Lys	Leu	
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Arg	His	Asp	Leu	Lys	Lys	Thr	Ser	Ile	Thr	Gln	Gln	Pro	Ser	Lys	His	
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Leu	Glu	Asp	Ser	Thr	Met	Gly	Ser	Val	Ala	Asp	Thr	Val	Ala	Arg	Val	
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Leu	Arg	Gly	Cys	Leu	Glu	Asn	Met	Pro	Glu	Ala	Asp	Cys	Ile	Pro	Lys	
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Glu	Gln	Leu	Ser	Thr	Ser	Phe	Gln	Trp	Val	Thr	Lys	Trp	Val	Asp	Tyr	
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tct	aac	aaa	tat	ggc	ttt	ggg	tac	cag	ctc	tca	gac	cac	acc	gtc	ggg	1705
Ser	Asn	Lys	Tyr	Gly	Phe	Gly	Tyr	Gln	Leu	Ser	Asp	His	Thr	Val	Gly	
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Val	Leu	Phe	Asn	Asn	Gly	Ala	His	Met	Ser	Leu	Leu	Pro	Asp	Lys	Lys	
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aca gat gct cct gag caa ttt att agt caa gtg acg gtg ctg aaa tac	1849
Thr Asp Ala Pro Glu Gln Phe Ile Ser Gln Val Thr Val Leu Lys Tyr	
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ttt tct cat tac atg gag gag aac ctc atg gat ggt gga gat ctg cct	1897
Phe Ser His Tyr Met Glu Glu Asn Leu Met Asp Gly Gly Asp Leu Pro	
575 580 585 590	
agt gtt act gat att cga aga cct cgg ctc tac ctc ctt cag tgg cta	1945
Ser Val Thr Asp Ile Arg Arg Pro Arg Leu Tyr Leu Leu Gln Trp Leu	
595 600 605	
aaa tct gat aag gcc cta atg atg ctc ttt aat gat ggc acc ttt cag	1993
Lys Ser Asp Lys Ala Leu Met Met Leu Phe Asn Asp Gly Thr Phe Gln	
610 615 620	
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Val Asn Phe Tyr His Asp His Thr Lys Ile Ile Ile Cys Ser Gln Asn	
625 630 635	
gaa gaa tac ctt ctc acc tac atc aat gag gat agg ata tct aca act	2089
Glu Glu Tyr Leu Leu Thr Tyr Ile Asn Glu Asp Arg Ile Ser Thr Thr	
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Phe Arg Leu Thr Thr Leu Leu Met Ser Gly Cys Ser Ser Glu Leu Lys	
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2783

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 Thr Gly Pro Asp Gly Lys Gly Met Asn Pro Pro Ser Tyr Tyr Thr Gln
 50 55 60
 Pro Ala Pro Ile Pro Asn Asn Asn Pro Ile Thr Val Gln Thr Val Tyr
 65 70 75 80
 Val Gln His Pro Ile Thr Phe Leu Asp Arg Pro Ile Gln Met Cys Cys
 85 90 95
 Pro Ser Cys Asn Lys Met Ile Val Ser Gln Leu Ser Tyr Asn Ala Gly
 100 105 110
 Ala Leu Thr Trp Leu Ser Cys Gly Ser Leu Cys Leu Leu Gly Cys Ile
 115 120 125
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Ser Ala Pro Ser Ala Pro Pro Ser Tyr Glu Glu Thr Val Ala Val Asn			
15	20	25	30
agt tat tac ccc aca cct cca gct ccc atg cct ggg cca act acg ggg			207
Ser Tyr Tyr Pro Thr Pro Pro Ala Pro Met Pro Gly Pro Thr Thr Gly			
	35	40	45
ctt gtg acg ggg cct gat ggg aag ggc atg aat cct cct tcg tat tat			255
Leu Val Thr Gly Pro Asp Gly Lys Gly Met Asn Pro Pro Ser Tyr Tyr			
	50	55	60
acc cag cca gcg ccc atc ccc aat aac aat cca att acc gtg cag acg			303
Thr Gln Pro Ala Pro Ile Pro Asn Asn Asn Pro Ile Thr Val Gln Thr			
	65	70	75
gtc tac gtg cag cac ccc atc acc ttt ttg gac cgc cct atc caa atg			351
Val Tyr Val Gln His Pro Ile Thr Phe Leu Asp Arg Pro Ile Gln Met			
	80	85	90
tgt tgt cct tcc tgc aac aag atg atc gtg agt cag ctg tcc tat aac			399
Cys Cys Pro Ser Cys Asn Lys Met Ile Val Ser Gln Leu Ser Tyr Asn			
	95	100	105
gcc ggt gct ctg acc tgg ctg tcc tgc ggg agc ctg tgc ctg ctg ggg			447
Ala Gly Ala Leu Thr Trp Leu Ser Cys Gly Ser Leu Cys Leu Leu Gly			
	115	120	125
tgc ata gcg ggc tgc tgc ttc atc ccc ttc tgc gtg gat gcc ctg cag			495
Cys Ile Ala Gly Cys Cys Phe Ile Pro Phe Cys Val Asp Ala Leu Gln			
	130	135	140
gac gtg gac cat tac tgt ccc aac tgc aga gct ctc ctg ggc acc tac			543
Asp Val Asp His Tyr Cys Pro Asn Cys Arg Ala Leu Leu Gly Thr Tyr			
	145	150	155
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Lys Arg Leu			
160			
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aacagttttt	atgacctcct	tttggctctg	aatactttcg	aacagaattt	ctttttttta	1372
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 Met Ser Val Pro Gly Pro Tyr Gln Ala Ala Thr Gly Pro Ser
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 Ser Ala Pro Ser Ala Pro Pro Ser Tyr Glu Glu Thr Val Ala Val Asn
 15 20 25 30
 agt tat tac ccc aca cct cca gct ccc atg cct ggg cca act acg ggg 207
 Ser Tyr Tyr Pro Thr Pro Pro Ala Pro Met Pro Gly Pro Thr Thr Gly
 35 40 45
 ctt gtg acg ggg cct gat ggg aag ggc atg aat cct cct tcg tat tat 255
 Leu Val Thr Gly Pro Asp Gly Lys Gly Met Asn Pro Pro Ser Tyr Tyr
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 Thr Gln Pro Ala Pro Ile Pro Asn Asn Asn Pro Ile Thr Val Gln Thr
 65 70 75
 gtc tac gtg cag cac ccc atc acc ttt ttg gac cgc cct gtc caa atg 351
 Val Tyr Val Gln His Pro Ile Thr Phe Leu Asp Arg Pro Val Gln Met
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 Cys Cys Pro Ser Cys Asn Lys Met Ile Val Ser Gln Leu Ser Tyr Asn
 95 100 105 110
 gcc ggt gct ctg acc tgg ctg tcc tgc ggg agc ctg tgc ctg ctg ggg 447
 Ala Gly Ala Leu Thr Trp Leu Ser Cys Gly Ser Leu Cys Leu Leu Gly
 115 120 125
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 Cys Ile Ala Gly Cys Cys Phe Ile Pro Phe Cys Val Asp Ala Leu Gln
 130 135 140
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 Asp Val Asp His Tyr Cys Pro Asn Cys Arg Ala Leu Leu Gly Thr Tyr
 145 150 155
 aag cgt ttg taggactcag ccagacgtgg agggagccgg gtgccgcagg 592
 Lys Arg Leu

160

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 aagcgatcct tctgccttgg cctccogaag tgctgggatt gcaggcataa gctaccatgc 1492
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<211> 249

<212> PRT

<213> Homo sapiens

<400> 107

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			20					25					30		
Val	Thr	Thr	Asn	Leu	Lys	Leu	Arg	Asn	Pro	Ser	Asp	Arg	Lys	Val	Cys
		35					40					45			
Phe	Lys	Val	Lys	Thr	Thr	Ala	Pro	Arg	Arg	Tyr	Cys	Val	Arg	Pro	Asn
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Ser	Gly	Ile	Ile	Asp	Pro	Gly	Ser	Thr	Val	Thr	Val	Ser	Val	Met	Leu
65					70					75				80	

Gln	Pro	Phe	Asp	Tyr 85	Asp	Pro	Asn	Glu	Lys 90	Ser	Lys	His	Lys	Phe 95	Met
Val	Gln	Thr	Ile 100	Phe	Ala	Pro	Pro	Asn 105	Thr	Ser	Asp	Met	Glu 110	Ala	Val
Trp	Lys	Glu 115	Ala	Lys	Pro	Asp	Glu 120	Leu	Met	Asp	Ser	Lys 125	Leu	Arg	Cys
Val	Phe 130	Glu	Met	Pro	Asn	Glu 135	Asn	Asp	Lys	Leu	Asn 140	Asp	Met	Glu	Pro
Ser 145	Lys	Ala	Val	Pro	Leu 150	Asn	Ala	Ser	Lys	Gln 155	Asp	Gly	Pro	Met	Pro 160
Lys	Pro	His	Ser	Val 165	Ser	Leu	Asn	Asp	Thr 170	Glu	Thr	Arg	Lys	Leu 175	Met
Glu	Glu	Cys	Lys 180	Arg	Leu	Gln	Gly	Glu 185	Met	Met	Lys	Leu	Ser 190	Glu	Glu
Asn	Arg	His 195	Leu	Arg	Asp	Glu	Gly 200	Leu	Arg	Leu	Arg	Lys 205	Val	Ala	His
Ser	Asp 210	Lys	Pro	Gly	Ser	Thr 215	Ser	Thr	Ala	Ser	Phe 220	Arg	Asp	Asn	Val
Thr 225	Ser	Pro	Leu	Pro	Ser	Leu	Leu	Val	Val	Ile 235	Ala	Ala	Ile	Phe	Ile 240
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<212> DNA
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<220>
<221> CDS
<222> (232) .. (978)
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gcgagcctgg cctcgctcta gagctcggcc gagccgtcgc cgccgtcgtc ccccgccccc 180
agtcagcaaa ccgccgcgcg gggcgcgccc ccgctctgcg ctgtctctcc g atg gcg 237
                                     Met Ala
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tcc gcc tca ggg gcc atg gcg aag cac gag cag atc ctg gtc ctc gat 285
Ser Ala Ser Gly Ala Met Ala Lys His Glu Gln Ile Leu Val Leu Asp

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5					10					15						
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Pro	Pro	Thr	Asp	Leu	Lys	Phe	Lys	Gly	Pro	Phe	Thr	Asp	Val	Val	Thr	
	20					25					30					
aca	aat	ctt	aaa	ttg	cga	aat	cca	tcg	gat	aga	aaa	gtg	tgt	ttc	aaa	381
Thr	Asn	Leu	Lys	Leu	Arg	Asn	Pro	Ser	Asp	Arg	Lys	Val	Cys	Phe	Lys	
35				40					45					50		
gtg	aag	act	aca	gca	cct	cgc	cgg	tac	tgt	gtg	agg	ccc	aac	agt	gga	429
Val	Lys	Thr	Thr	Ala	Pro	Arg	Arg	Tyr	Cys	Val	Arg	Pro	Asn	Ser	Gly	
				55				60						65		
att	att	gac	cca	ggg	tca	act	gtg	act	gtt	tca	gta	atg	cta	cag	ccc	477
Ile	Ile	Asp	Pro	Gly	Ser	Thr	Val	Thr	Val	Ser	Val	Met	Leu	Gln	Pro	
			70				75						80			
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Phe	Asp	Tyr	Asp	Pro	Asn	Glu	Lys	Ser	Lys	His	Lys	Phe	Met	Val	Gln	
	85					90						95				
aca	att	ttt	gct	cca	cca	aac	act	tca	gat	atg	gaa	gct	gtg	tggt	aaa	573
Thr	Ile	Phe	Ala	Pro	Pro	Asn	Thr	Ser	Asp	Met	Glu	Ala	Val	Trp	Lys	
	100					105					110					
gag	gca	aaa	cct	gat	gaa	tta	atg	gat	tcc	aaa	ttg	aga	tgc	gta	ttt	621
Glu	Ala	Lys	Pro	Asp	Glu	Leu	Met	Asp	Ser	Lys	Leu	Arg	Cys	Val	Phe	
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gaa	atg	ccc	aat	gaa	aat	gat	aaa	ttg	aat	gat	atg	gaa	cct	agc	aaa	669
Glu	Met	Pro	Asn	Glu	Asn	Asp	Lys	Leu	Asn	Asp	Met	Glu	Pro	Ser	Lys	
				135				140						145		
gct	gtt	cca	ctg	aat	gca	tct	aag	caa	gat	gga	cct	atg	cca	aaa	cca	717
Ala	Val	Pro	Leu	Asn	Ala	Ser	Lys	Gln	Asp	Gly	Pro	Met	Pro	Lys	Pro	
			150					155					160			
cac	agt	gtt	tca	ctt	aat	gat	acc	gaa	aca	agg	aaa	cta	atg	gaa	gag	765
His	Ser	Val	Ser	Leu	Asn	Asp	Thr	Glu	Thr	Arg	Lys	Leu	Met	Glu	Glu	
	165					170						175				
tgt	aaa	aga	ctt	cag	gga	gaa	atg	atg	aag	cta	tca	gaa	gaa	aat	cgg	813
Cys	Lys	Arg	Leu	Gln	Gly	Glu	Met	Met	Lys	Leu	Ser	Glu	Glu	Asn	Arg	
	180					185					190					
cac	ctg	aga	gat	gaa	ggg	tta	agg	ctc	aga	aag	gta	gca	cat	tcg	gat	861
His	Leu	Arg	Asp	Glu	Gly	Leu	Arg	Leu	Arg	Lys	Val	Ala	His	Ser	Asp	
	195				200					205					210	
aaa	cct	gga	tca	acc	tca	act	gca	tcc	ttc	aga	gat	aat	gtc	acc	agt	909
Lys	Pro	Gly	Ser	Thr	Ser	Thr	Ala	Ser	Phe	Arg	Asp	Asn	Val	Thr	Ser	
				215					220					225		
cct	ctt	cct	tca	ctt	ctt	gtt	gta	att	gca	gcc	att	ttc	att	gga	ttc	957
Pro	Leu	Pro	Ser	Leu	Leu	Val	Val	Ile	Ala	Ala	Ile	Phe	Ile	Gly	Phe	
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ttt cta ggg aaa ttc atc ttg tagagtgaag catgcagagt gctgtttctt 1008
Phe Leu Gly Lys Phe Ile Leu
245

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tggtattttta ataatccctt taaattttat ctgttgctgt tacctcttga aatatgattt 1368
atttagattg ctaatcccac tcattcagga aatgccaga ggtattcctt ggggaaatgg 1428
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<213> Homo sapiens

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Leu Arg Pro Glu His Phe Gln Glu Val Gly Tyr Ala Ala Pro Pro Ser
35 40 45
Pro Pro Leu Ser Arg Ser Leu Pro Met Asp His Pro Asp Ser Ser Gln
50 55 60
His Gly Pro Pro Phe Glu Gly Gln Ser Gln Val Gln Pro Pro Pro Ser
65 70 75 80
Gln Glu Ala Thr Pro Leu Gln Gln Glu Lys Leu Leu Pro Ala Gln Leu
85 90 95
Pro Ala Glu Lys Glu Val Gly Pro Pro Leu Pro Gln Glu Ala Val Pro
100 105 110
Leu Gln Lys Glu Leu Pro Ser Leu Gln His Pro Asn Glu Gln Lys Glu
115 120 125
Gly Thr Pro Ala Pro Phe Gly Asp Gln Ser His Pro Glu Pro Glu Ser

130	135	140
Trp Asn Ala Ala Gln His Cys Gln Gln Asp Arg Ser Gln Gly Gly Trp 145 150 155 160		
Gly His Arg Leu Asp Gly Phe Pro Pro Gly Arg Pro Ser Pro Asp Asn 165 170 175		
Leu Asn Gln Ile Cys Leu Pro Asn Arg Gln His Val Val Tyr Gly Pro 180 185 190		
Trp Asn Leu Pro Gln Ser Ser Tyr Ser His Leu Thr Arg Gln Gly Glu 195 200 205		
Thr Leu Asn Phe Leu Glu Ile Gly Tyr Ser Arg Cys Cys His Cys Arg 210 215 220		
Ser His Thr Asn Arg Leu Glu Cys Ala Lys Leu Val Trp Glu Glu Ala 225 230 235 240		
Met Ser Arg Phe Cys Glu Ala Glu Phe Ser Val Lys Thr Arg Pro His 245 250 255		
Trp Cys Cys Thr Arg Gln Gly Glu Ala Arg Phe Ser Cys Phe Gln Glu 260 265 270		
Glu Ala Pro Gln Pro His Tyr Gln Leu Arg Ala Cys Pro Ser His Gln 275 280 285		
Pro Asp Ile Ser Ser Gly Leu Glu Leu Pro Phe Pro Pro Gly Val Pro 290 295 300		
Thr Leu Asp Asn Ile Lys Asn Ile Cys His Leu Arg Arg Phe Arg Ser 305 310 315 320		
Val Pro Arg Asn Leu Pro Ala Thr Asp Pro Leu Gln Arg Glu Leu Leu 325 330 335		
Ala Leu Ile Gln Leu Glu Arg Glu Phe Gln Arg Cys Cys Arg Gln Gly 340 345 350		
Asn Asn His Thr Cys Thr Trp Lys Ala Trp Glu Asp Thr Leu Asp Lys 355 360 365		
Tyr Cys Asp Arg Glu Tyr Ala Val Lys Thr His His His Leu Cys Cys 370 375 380		
Arg His Pro Pro Ser Pro Thr Arg Asp Glu Cys Phe Ala Arg Arg Ala 385 390 395 400		
Pro Tyr Pro Asn Tyr Asp Arg Asp Ile Leu Thr Ile Asp Ile Gly Arg 405 410 415		
Val Thr Pro Asn Leu Met Gly His Leu Cys Gly Asn Gln Arg Val Leu 420 425 430		
Thr Lys His Lys His Ile Pro Gly Leu Ile His Asn Met Thr Ala Arg		

435		440		445	
Cys Cys Asp Leu Pro Phe Pro Glu Gln Ala Cys Cys Ala Glu Glu Glu					
450		455		460	
Lys Leu Thr Phe Ile Asn Asp Leu Cys Gly Pro Arg Arg Asn Ile Trp					
465		470		475	480
Arg Asp Pro Ala Leu Cys Cys Tyr Leu Ser Pro Gly Asp Glu Gln Val					
	485		490		495
Asn Cys Phe Asn Ile Asn Tyr Leu Arg Asn Val Ala Leu Val Ser Gly					
	500		505		510
Asp Thr Glu Asn Ala Lys Gly Gln Gly Glu Gln Gly Ser Thr Gly Gly					
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Thr Asn Ile Ser Ser Thr Ser Glu Pro Lys Glu Glu					
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<210> 110
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 <213> Homo sapiens
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 <222> (102)..(1721)

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 Met Gly Thr Thr Ala
 1 5
 aga gca gcc ttg gtc ttg acc tat ttg gct gtt gct tct gct gcc tct 164
 Arg Ala Ala Leu Val Leu Thr Tyr Leu Ala Val Ala Ser Ala Ala Ser
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 gag gga ggc ttc acg gct aca gga cag agg cag ctg agg cca gag cac 212
 Glu Gly Gly Phe Thr Ala Thr Gly Gln Arg Gln Leu Arg Pro Glu His
 25 30 35
 ttt caa gaa gtt ggc tac gca gct ccc ccc tcc cca ccc cta tcc cga 260
 Phe Gln Glu Val Gly Tyr Ala Ala Pro Pro Ser Pro Pro Leu Ser Arg
 40 45 50
 agc ctc ccc atg gat cac cct gac tcc tct cag cat ggc cct ccc ttt 308
 Ser Leu Pro Met Asp His Pro Asp Ser Ser Gln His Gly Pro Pro Phe
 55 60 65
 gag gga cag agt caa gtg cag ccc cct ccc tct cag gag gcc acc cct 356
 Glu Gly Gln Ser Gln Val Gln Pro Pro Pro Ser Gln Glu Ala Thr Pro
 70 75 80 85

ctc	caa	cag	gaa	aag	ctg	cta	cct	gcc	caa	ctc	cct	gct	gaa	aag	gaa	404
Leu	Gln	Gln	Glu	Lys	Leu	Leu	Pro	Ala	Gln	Leu	Pro	Ala	Glu	Lys	Glu	
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gtg	ggt	ccc	cct	ctc	cct	cag	gaa	gct	gtc	ccc	ctc	caa	aaa	gag	ctg	452
Val	Gly	Pro	Pro	Leu	Pro	Gln	Glu	Ala	Val	Pro	Leu	Gln	Lys	Glu	Leu	
			105					110					115			
ccc	tct	ctc	cag	cac	ccc	aat	gaa	cag	aag	gaa	gga	acg	cca	gct	cca	500
Pro	Ser	Leu	Gln	His	Pro	Asn	Glu	Gln	Lys	Glu	Gly	Thr	Pro	Ala	Pro	
			120					125					130			
ttt	ggg	gac	cag	agc	cat	cca	gaa	cct	gag	tcc	tgg	aat	gca	gcc	cag	548
Phe	Gly	Asp	Gln	Ser	His	Pro	Glu	Pro	Glu	Ser	Trp	Asn	Ala	Ala	Gln	
		135						140				145				
cac	tgc	caa	cag	gac	cgg	tcc	caa	ggg	ggc	tgg	ggc	cac	cgg	ctg	gat	596
His	Cys	Gln	Gln	Asp	Arg	Ser	Gln	Gly	Gly	Trp	Gly	His	Arg	Leu	Asp	
					155					160					165	
ggc	ttc	ccc	cct	ggg	cgg	cct	tct	cca	gac	aat	ctg	aac	caa	atc	tgc	644
Gly	Phe	Pro	Pro	Gly	Arg	Pro	Ser	Pro	Asp	Asn	Leu	Asn	Gln	Ile	Cys	
				170					175					180		
ctt	cct	aac	cgt	cag	cat	gtg	gta	tat	ggg	ccc	tgg	aac	cta	cca	cag	692
Leu	Pro	Asn	Arg	Gln	His	Val	Val	Tyr	Gly	Pro	Trp	Asn	Leu	Pro	Gln	
			185					190					195			
tcc	agc	tac	tcc	cac	ctc	act	cgc	cag	ggg	gag	acc	ctc	aat	ttc	ctg	740
Ser	Ser	Tyr	Ser	His	Leu	Thr	Arg	Gln	Gly	Glu	Thr	Leu	Asn	Phe	Leu	
			200				205					210				
gag	att	gga	tat	tcc	cgc	tgc	tgc	cac	tgc	cgc	agc	cac	aca	aac	cgc	788
Glu	Ile	Gly	Tyr	Ser	Arg	Cys	Cys	His	Cys	Arg	Ser	His	Thr	Asn	Arg	
		215				220					225					
cta	gag	tgt	gcc	aaa	ctt	gtg	tgg	gag	gaa	gca	atg	agc	cga	ttc	tgt	836
Leu	Glu	Cys	Ala	Lys	Leu	Val	Trp	Glu	Glu	Ala	Met	Ser	Arg	Phe	Cys	
					235					240					245	
gag	gcc	gag	ttc	tcg	gtc	aag	acc	cga	ccc	cac	tgg	tgc	tgc	acg	cgg	884
Glu	Ala	Glu	Phe	Ser	Val	Lys	Thr	Arg	Pro	His	Trp	Cys	Cys	Thr	Arg	
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cag	ggg	gag	gct	cgg	ttc	tcc	tgc	ttc	cag	gag	gaa	gct	ccc	cag	cca	932
Gln	Gly	Glu	Ala	Arg	Phe	Ser	Cys	Phe	Gln	Glu	Glu	Ala	Pro	Gln	Pro	
			265					270					275			
cac	tac	cag	ctc	cgg	gcc	tgc	ccc	agc	cat	cag	cct	gat	att	tcc	tcg	980
His	Tyr	Gln	Leu	Arg	Ala	Cys	Pro	Ser	His	Gln	Pro	Asp	Ile	Ser	Ser	
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ggg	ctt	gag	ctg	cct	ttc	cct	cct	ggg	gtg	ccc	aca	ttg	gac	aat	atc	1028
Gly	Leu	Glu	Leu	Pro	Phe	Pro	Pro	Gly	Val	Pro	Thr	Leu	Asp	Asn	Ile	
			295			300					305					
aag	aac	atc	tgc	cac	ctg	agg	cgc	ttc	cgc	tct	gtg	cca	cgc	aac	ctg	1076

Lys	Asn	Ile	Cys	His	Leu	Arg	Arg	Phe	Arg	Ser	Val	Pro	Arg	Asn	Leu		
310					315					320					325		
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Pro	Ala	Thr	Asp	Pro	Leu	Gln	Arg	Glu	Leu	Leu	Ala	Leu	Ile	Gln	Leu		
				330					335					340			
gag	agg	gag	ttc	cag	cgc	tgc	tgc	cgc	cag	ggg	aac	aat	cac	acc	tgt	1172	
Glu	Arg	Glu	Phe	Gln	Arg	Cys	Cys	Arg	Gln	Gly	Asn	Asn	His	Thr	Cys		
			345					350					355				
aca	tgg	aag	gcc	tgg	gag	gat	acc	ctt	gac	aaa	tac	tgt	gac	cgg	gag	1220	
Thr	Trp	Lys	Ala	Trp	Glu	Asp	Thr	Leu	Asp	Lys	Tyr	Cys	Asp	Arg	Glu		
		360					365						370				
tat	gct	gtg	aag	acc	cac	cac	cac	ttg	tgt	tgc	cgc	cac	cct	ccc	agc	1268	
Tyr	Ala	Val	Lys	Thr	His	His	His	Leu	Cys	Cys	Arg	His	Pro	Pro	Ser		
	375						380					385					
cct	act	cgg	gat	gag	tgc	ttt	gcc	cgt	cgg	gct	cct	tac	ccc	aac	tat	1316	
Pro	Thr	Arg	Asp	Glu	Cys	Phe	Ala	Arg	Arg	Ala	Pro	Tyr	Pro	Asn	Tyr		
	390				395					400					405		
gac	cgg	gac	atc	ttg	acc	att	gac	atc	ggg	cga	gtc	acc	ccc	aac	ctc	1364	
Asp	Arg	Asp	Ile	Leu	Thr	Ile	Asp	Ile	Gly	Arg	Val	Thr	Pro	Asn	Leu		
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atg	ggc	cac	ctc	tgt	gga	aac	caa	aga	gtt	ctc	acc	aag	cat	aaa	cat	1412	
Met	Gly	His	Leu	Cys	Gly	Asn	Gln	Arg	Val	Leu	Thr	Lys	His	Lys	His		
			425					430					435				
att	cct	ggg	ctg	atc	cac	aac	atg	act	gcc	cgc	tgc	tgt	gac	ctg	cca	1460	
Ile	Pro	Gly	Leu	Ile	His	Asn	Met	Thr	Ala	Arg	Cys	Cys	Asp	Leu	Pro		
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ttt	cca	gaa	cag	gcc	tgc	tgt	gca	gag	gag	gag	aaa	tta	acc	ttc	atc	1508	
Phe	Pro	Glu	Gln	Ala	Cys	Cys	Ala	Glu	Glu	Glu	Lys	Leu	Thr	Phe	Ile		
	455					460					465						
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Asn	Asp	Leu	Cys	Gly	Pro	Arg	Arg	Asn	Ile	Trp	Arg	Asp	Pro	Ala	Leu		
	470				475					480					485		
tgc	tgt	tac	ctg	agt	cct	ggg	gat	gaa	cag	gtc	aac	tgc	ttc	aac	atc	1604	
Cys	Cys	Tyr	Leu	Ser	Pro	Gly	Asp	Glu	Gln	Val	Asn	Cys	Phe	Asn	Ile		
				490					495					500			
aat	tat	ctg	agg	aac	gtg	gct	cta	gtg	tct	gga	gac	act	gag	aac	gcc	1652	
Asn	Tyr	Leu	Arg	Asn	Val	Ala	Leu	Val	Ser	Gly	Asp	Thr	Glu	Asn	Ala		
			505					510					515				
aag	ggc	cag	ggg	gag	cag	ggc	tca	act	gga	gga	aca	aat	atc	agc	tcc	1700	
Lys	Gly	Gln	Gly	Glu	Gln	Gly	Ser	Thr	Gly	Gly	Thr	Asn	Ile	Ser	Ser		
		520					525						530				
acc	tct	gag	ccc	aag	gaa	gaa	tgagtcaccc	cagagcccta	gagggtcaga							1751	
Thr	Ser	Glu	Pro	Lys	Glu	Glu											

245					250					255					
Trp	Cys	Cys	Thr	Arg	Gln	Gly	Glu	Ala	Arg	Phe	Ser	Cys	Phe	Gln	Glu
			260					265					270		
Glu	Ala	Pro	Gln	Pro	His	Tyr	Gln	Leu	Arg	Ala	Cys	Pro	Ser	His	Gln
		275					280					285			
Pro	Asp	Ile	Ser	Ser	Gly	Leu	Glu	Leu	Pro	Phe	Pro	Pro	Gly	Val	Pro
	290					295					300				
Thr	Leu	Asp	Asn	Ile	Lys	Asn	Ile	Cys	His	Leu	Arg	Arg	Phe	Arg	Ser
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Val	Pro	Arg	Asn	Leu	Pro	Ala	Thr	Asp	Pro	Leu	Gln	Arg	Glu	Leu	Leu
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Ala	Leu	Ile	Gln	Leu	Glu	Arg	Glu	Phe	Gln	Arg	Cys	Cys	Arg	Gln	Gly
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Asn	Asn	His	Thr	Cys	Thr	Trp	Lys	Ala	Trp	Glu	Asp	Thr	Leu	Asp	Lys
		355					360					365			
Tyr	Cys	Asp	Arg	Glu	Tyr	Ala	Val	Lys	Thr	His	His	His	Leu	Cys	Cys
	370					375					380				
Arg	His	Pro	Pro	Ser	Pro	Thr	Arg	Asp	Glu	Cys	Phe	Ala	Arg	Arg	Ala
385					390					395					400
Pro	Tyr	Pro	Asn	Tyr	Asp	Arg	Asp	Ile	Leu	Thr	Ile	Asp	Ile	Ser	Arg
			405						410					415	
Val	Thr	Pro	Asn	Leu	Met	Gly	His	Leu	Cys	Gly	Asn	Gln	Arg	Val	Leu
			420					425					430		
Thr	Lys	His	Lys	His	Ile	Pro	Gly	Leu	Ile	His	Asn	Met	Thr	Ala	Arg
		435					440					445			
Cys	Cys	Asp	Leu	Pro	Phe	Pro	Glu	Gln	Ala	Cys	Cys	Ala	Glu	Glu	Glu
	450					455					460				
Lys	Leu	Thr	Phe	Ile	Asn	Asp	Leu	Cys	Gly	Pro	Arg	Arg	Asn	Ile	Trp
465					470					475					480
Arg	Asp	Pro	Ala	Leu	Cys	Cys	Tyr	Leu	Ser	Pro	Gly	Asp	Glu	Gln	Val
				485					490					495	
Asn	Cys	Phe	Asn	Ile	Asn	Tyr	Leu	Arg	Asn	Val	Ala	Leu	Val	Ser	Gly
			500					505					510		
Asp	Thr	Glu	Asn	Ala	Lys	Gly	Gln	Gly	Glu	Gln	Gly	Ser	Thr	Gly	Gly
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Thr	Asn	Ile	Ser	Ser	Thr	Ser	Glu	Pro	Lys	Glu	Glu				
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 <213> Homo sapiens

<220>
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 Met Gly Thr Thr Ala
 1 5
 aga gca gcc ttg gtc ttg acc tat ttg gct gtt gct tct gct gcc tct 164
 Arg Ala Ala Leu Val Leu Thr Tyr Leu Ala Val Ala Ser Ala Ala Ser
 10 15 20
 gag gga ggc ttc acg gct aca gga cag agg cag ctg agg cca gag cac 212
 Glu Gly Gly Phe Thr Ala Thr Gly Gln Arg Gln Leu Arg Pro Glu His
 25 30 35
 ttt caa gaa gtt ggc tac gca gct ccc ccc tcc cca ccc cta tcc cga 260
 Phe Gln Glu Val Gly Tyr Ala Ala Pro Pro Ser Pro Pro Leu Ser Arg
 40 45 50
 agc ctc ccc atg gat cac cct gac tcc tct cag cat ggc cct ccc ttt 308
 Ser Leu Pro Met Asp His Pro Asp Ser Ser Gln His Gly Pro Pro Phe
 55 60 65
 gag gga cag agt caa gtg cag ccc cct ccc tct cag gag gcc acc cct 356
 Glu Gly Gln Ser Gln Val Gln Pro Pro Pro Ser Gln Glu Ala Thr Pro
 70 75 80 85
 ctc caa cag gaa aag ctg cta cct gcc caa ctc cct gct gaa aag gaa 404
 Leu Gln Gln Glu Lys Leu Leu Pro Ala Gln Leu Pro Ala Glu Lys Glu
 90 95 100
 gtg ggt ccc cct ctc cct cag gaa gct gtc ccc ctc caa aaa gag ctg 452
 Val Gly Pro Pro Leu Pro Gln Glu Ala Val Pro Leu Gln Lys Glu Leu
 105 110 115
 ccc tct ctc cag cac ccc aat gaa cag aag gaa gga acg cca gct cca 500
 Pro Ser Leu Gln His Pro Asn Glu Gln Lys Glu Gly Thr Pro Ala Pro
 120 125 130
 ttt ggg gac cag agc cat cca gaa cct gag tcc tgg aat gca gcc cag 548
 Phe Gly Asp Gln Ser His Pro Glu Pro Glu Ser Trp Asn Ala Ala Gln
 135 140 145
 cac tgc caa cag gac cgg tcc caa ggg ggc tgg ggc cac cgg ctg gat 596
 His Cys Gln Gln Asp Arg Ser Gln Gly Gly Trp Gly His Arg Leu Asp
 150 155 160 165
 ggc ttc ccc cct ggg cgg cct tct cca gac aat ctg aac caa atc tgc 644

Gly	Phe	Pro	Pro	Gly	Arg	Pro	Ser	Pro	Asp	Asn	Leu	Asn	Gln	Ile	Cys	
				170					175					180		
ctt	cct	aac	cgt	cag	cat	gtg	gta	tat	ggg	ccc	tgg	aac	cta	cca	cag	692
Leu	Pro	Asn	Arg	Gln	His	Val	Val	Tyr	Gly	Pro	Trp	Asn	Leu	Pro	Gln	
			185					190					195			
tcc	agc	tac	tcc	cac	ctc	act	cgc	cag	ggg	gag	acc	ctc	aat	ttc	ctg	740
Ser	Ser	Tyr	Ser	His	Leu	Thr	Arg	Gln	Gly	Glu	Thr	Leu	Asn	Phe	Leu	
		200					205					210				
gag	att	gga	tat	tcc	cgc	tgc	tgc	cac	tgc	cgc	agc	cac	aca	aac	cgc	788
Glu	Ile	Gly	Tyr	Ser	Arg	Cys	Cys	His	Cys	Arg	Ser	His	Thr	Asn	Arg	
	215					220					225					
cta	gag	tgt	gcc	aaa	ctt	gtg	tgg	gag	gaa	gca	atg	agc	cga	ttc	tgt	836
Leu	Glu	Cys	Ala	Lys	Leu	Val	Trp	Glu	Glu	Ala	Met	Ser	Arg	Phe	Cys	
230					235					240					245	
gag	gcc	gag	ttc	tcg	gtc	aag	acc	cga	ccc	cac	tgg	tgc	tgc	acg	cgg	884
Glu	Ala	Glu	Phe	Ser	Val	Lys	Thr	Arg	Pro	His	Trp	Cys	Cys	Thr	Arg	
			250					255						260		
cag	ggg	gag	gct	cgg	ttc	tcc	tgc	ttc	cag	gag	gaa	gct	ccc	cag	cca	932
Gln	Gly	Glu	Ala	Arg	Phe	Ser	Cys	Phe	Gln	Glu	Glu	Ala	Pro	Gln	Pro	
			265				270						275			
cac	tac	cag	ctc	cgg	gcc	tgc	ccc	agc	cat	cag	cct	gat	att	tcc	tcg	980
His	Tyr	Gln	Leu	Arg	Ala	Cys	Pro	Ser	His	Gln	Pro	Asp	Ile	Ser	Ser	
		280				285						290				
ggg	ctt	gag	ctg	cct	ttc	cct	cct	ggg	gtg	ccc	aca	ttg	gac	aac	atc	1028
Gly	Leu	Glu	Leu	Pro	Phe	Pro	Pro	Gly	Val	Pro	Thr	Leu	Asp	Asn	Ile	
	295					300					305					
aag	aac	atc	tgc	cac	ctg	agg	cgc	ttc	cgc	tct	gtg	cca	cgc	aac	ctg	1076
Lys	Asn	Ile	Cys	His	Leu	Arg	Arg	Phe	Arg	Ser	Val	Pro	Arg	Asn	Leu	
310					315					320				325		
cca	gct	act	gac	ccc	cta	caa	agg	gag	ctg	ctg	gca	ctg	atc	cag	ctg	1124
Pro	Ala	Thr	Asp	Pro	Leu	Gln	Arg	Glu	Leu	Leu	Ala	Leu	Ile	Gln	Leu	
			330					335					340			
gag	agg	gag	ttc	cag	cgc	tgc	tgc	cgc	cag	ggg	aac	aac	cac	acc	tgt	1172
Glu	Arg	Glu	Phe	Gln	Arg	Cys	Cys	Arg	Gln	Gly	Asn	Asn	His	Thr	Cys	
			345				350						355			
aca	tgg	aag	gcc	tgg	gag	gat	acc	ctt	gac	aaa	tac	tgt	gac	cgg	gag	1220
Thr	Trp	Lys	Ala	Trp	Glu	Asp	Thr	Leu	Asp	Lys	Tyr	Cys	Asp	Arg	Glu	
		360				365						370				
tat	gct	gtg	aag	acc	cac	cac	cac	ttg	tgt	tgc	cgc	cac	cct	ccc	agc	1268
Tyr	Ala	Val	Lys	Thr	His	His	His	Leu	Cys	Cys	Arg	His	Pro	Pro	Ser	
	375					380					385					
cct	act	cgg	gat	gag	tgc	ttt	gcc	cgt	cgg	gct	cct	tac	ccc	aac	tat	1316
Pro	Thr	Arg	Asp	Glu	Cys	Phe	Ala	Arg	Arg	Ala	Pro	Tyr	Pro	Asn	Tyr	

390	395	400	405	
gac cgg gac atc ttg acc att gac atc agt cga gtc acc ccc aac ctc				1364
Asp Arg Asp Ile Leu Thr Ile Asp Ile Ser Arg Val Thr Pro Asn Leu	410	415	420	
atg ggc cac ctc tgt gga aac caa aga gtt ctc acc aag cat aaa cat				1412
Met Gly His Leu Cys Gly Asn Gln Arg Val Leu Thr Lys His Lys His	425	430	435	
att cct ggg ctg atc cac aac atg act gcc cgc tgc tgt gac ctg cca				1460
Ile Pro Gly Leu Ile His Asn Met Thr Ala Arg Cys Cys Asp Leu Pro	440	445	450	
ttt cca gaa cag gcc tgc tgt gca gag gag gag aaa tta acc ttc atc				1508
Phe Pro Glu Gln Ala Cys Cys Ala Glu Glu Glu Lys Leu Thr Phe Ile	455	460	465	
aat gat ctg tgt ggt ccc cga cgt aac atc tgg cga gac cct gcc ctc				1556
Asn Asp Leu Cys Gly Pro Arg Arg Asn Ile Trp Arg Asp Pro Ala Leu	470	475	480	485
tgc tgt tac ctg agt cct ggg gat gaa cag gtc aac tgc ttc aac atc				1604
Cys Cys Tyr Leu Ser Pro Gly Asp Glu Gln Val Asn Cys Phe Asn Ile	490	495	500	
aat tat ctg agg aac gtg gct cta gtg tct gga gac act gag aac gcc				1652
Asn Tyr Leu Arg Asn Val Ala Leu Val Ser Gly Asp Thr Glu Asn Ala	505	510	515	
aag ggc cag ggg gag cag ggc tca act gga gga aca aat atc agc tcc				1700
Lys Gly Gln Gly Glu Gln Gly Ser Thr Gly Gly Thr Asn Ile Ser Ser	520	525	530	
acc tct gag ccc aag gaa gaa tgagtcaccc cagagcccta gagggtcaga				1751
Thr Ser Glu Pro Lys Glu Glu	535	540		
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 <213> Homo sapiens

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 Arg Ile Leu Leu Leu Gly Thr Ala Val Glu Ser Ala Trp Gly Asp Glu
 35 40 45
 Gln Ser Ala Phe Arg Cys Asn Thr Gln Gln Pro Gly Cys Glu Asn Val

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Cys Tyr Asp Lys Ser Phe Pro Ile Ser His Val Arg Phe Trp Val Leu				
65		70		75 80
Gln Ile Ile Phe Val Ser Val Pro Thr Leu Leu Tyr Leu Ala His Val				
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Phe Tyr Val Met Arg Lys Glu Glu Lys Leu Asn Lys Lys Glu Glu Glu				
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Leu Lys Val Ala Gln Thr Asp Gly Val Asn Val Asp Met His Leu Lys				
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Gln Ile Glu Ile Lys Lys Phe Lys Tyr Gly Ile Glu Glu His Gly Lys				
	130		135	140
Val Lys Met Arg Gly Gly Leu Leu Arg Thr Tyr Ile Ile Ser Ile Leu				
	145		150	155 160
Phe Lys Ser Ile Phe Glu Val Ala Phe Leu Leu Ile Gln Trp Tyr Ile				
	165		170	175
Tyr Gly Phe Ser Leu Ser Ala Val Tyr Thr Cys Lys Arg Asp Pro Cys				
	180		185	190
Pro His Gln Val Asp Cys Phe Leu Ser Arg Pro Thr Glu Lys Thr Ile				
	195		200	205
Phe Ile Ile Phe Met Leu Val Val Ser Leu Val Ser Leu Ala Leu Asn				
	210		215	220
Ile Ile Glu Leu Phe Tyr Val Phe Phe Lys Gly Val Lys Asp Arg Val				
	225		230	235 240
Lys Gly Lys Ser Asp Pro Tyr His Ala Thr Ser Gly Ala Leu Ser Pro				
	245		250	255
Ala Lys Asp Cys Gly Ser Gln Lys Tyr Ala Tyr Phe Asn Gly Cys Ser				
	260		265	270
Ser Pro Thr Ala Pro Leu Ser Pro Met Ser Pro Pro Gly Tyr Lys Leu				
	275		280	285
Val Thr Gly Asp Arg Asn Asn Ser Ser Cys Arg Asn Tyr Asn Lys Gln				
	290		295	300
Ala Ser Glu Gln Thr Trp Ala Asn Tyr Ser Ala Glu Gln Asn Arg Met				
	305		310	315 320
Gly Gln Ala Gly Ser Thr Ile Ser Asn Ser His Ala Gln Pro Phe Asp				
	325		330	335
Phe Pro Asp Asp Asn Gln Asn Ser Lys Lys Leu Ala Ala Gly His Glu				
	340		345	350
Leu Gln Pro Leu Ala Ile Val Asp Gln Arg Pro Ser Ser Arg Ala Ser				

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Ser Arg Ala Ser Ser Arg Pro Arg Pro Asp Asp Leu Glu Ile

370 375 380

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attttacttc atcctccaag gagttcaatc acttggcgtg acttcactac ttttaagcaa	180
aagagtggcg cccaggcaac atg ggt gac tgg agc gcc tta ggc aaa ctc ctt	233
Met Gly Asp Trp Ser Ala Leu Gly Lys Leu Leu	
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gac aag gtt caa gcc tac tca act gct gga ggg aag gtg tgg ctg tca	281
Asp Lys Val Gln Ala Tyr Ser Thr Ala Gly Gly Lys Val Trp Leu Ser	
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gta ctt ttc att ttc cga atc ctg ctg ctg ggg aca gcg gtt gag tca	329
Val Leu Phe Ile Phe Arg Ile Leu Leu Leu Gly Thr Ala Val Glu Ser	
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gcc tgg gga gat gag cag tct gcc ttt cgt tgt aac act cag caa cct	377
Ala Trp Gly Asp Glu Gln Ser Ala Phe Arg Cys Asn Thr Gln Gln Pro	
45 50 55	
ggg tgt gaa aat gtc tgc tat gac aag tct ttc cca atc tct cat gtg	425
Gly Cys Glu Asn Val Cys Tyr Asp Lys Ser Phe Pro Ile Ser His Val	
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cgc ttc tgg gtc ctg cag atc ata ttt gtg tct gta ccc aca ctc ttg	473
Arg Phe Trp Val Leu Gln Ile Ile Phe Val Ser Val Pro Thr Leu Leu	
80 85 90	
tac ctg gct cat gtg ttc tat gtg atg cga aag gaa gag aaa ctg aac	521
Tyr Leu Ala His Val Phe Tyr Val Met Arg Lys Glu Glu Lys Leu Asn	
95 100 105	
aag aaa gag gaa gaa ctc aag gtt gcc caa act gat ggt gtc aat gtg	569
Lys Lys Glu Glu Glu Leu Lys Val Ala Gln Thr Asp Gly Val Asn Val	
110 115 120	
gac atg cac ttg aag cag att gag ata aag aag ttc aag tac ggt att	617
Asp Met His Leu Lys Gln Ile Glu Ile Lys Lys Phe Lys Tyr Gly Ile	
125 130 135	

tca agc aga gcc agc agt cgt gcc agc agc aga cct cgg cct gat gac 1337
 Ser Ser Arg Ala Ser Ser Arg Ala Ser Ser Arg Pro Arg Pro Asp Asp
 365 370 375

ctg gag atc tagatacagg cttgaaagca tcaagattcc actcaattgt 1386
 Leu Glu Ile
 380

ggagaagaaa aaaggtgctg tagaaagtgc accaggtggt aattttgatc cggaggaggt 1446
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 tcactggggg tgtatggggg agatgggtgg agagggaggg gataagagag gtgcatgttg 1566
 gtatttaaag tagtggattc aaagaactta gattataaat aagagttcca ttaggtgata 1626
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 gagcgggtgg taattgtggc taaatatttt tgttttacca agaaactgaa ataattctgg 1746
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35 40 45
Gln Ser Ala Phe Arg Cys Asn Thr Gln Gln Pro Gly Cys Glu Asn Val
50 55 60
Cys Tyr Asp Lys Ser Phe Pro Ile Ser His Val Arg Phe Trp Val Leu
65 70 75 80
Gln Ile Ile Phe Val Ser Val Pro Thr Leu Leu Tyr Leu Ala His Val
85 90 95
Phe Tyr Val Met Arg Lys Glu Glu Lys Leu Asn Lys Lys Glu Glu Glu
100 105 110
Leu Lys Val Ala Gln Thr Asp Gly Val Asn Val Asp Met His Leu Lys
115 120 125
Gln Ile Glu Ile Lys Lys Phe Lys Tyr Gly Ile Glu Glu His Gly Lys
130 135 140
Val Lys Met Arg Gly Gly Leu Leu Arg Thr Tyr Ile Ile Ser Ile Leu
145 150 155 160
Phe Lys Ser Ile Phe Glu Val Ala Phe Leu Leu Ile Gln Trp Tyr Ile
165 170 175
Tyr Gly Phe Ser Leu Ser Ala Val Tyr Thr Cys Lys Arg Asp Pro Cys
180 185 190
Pro His Gln Val Asp Cys Phe Leu Ser Arg Pro Thr Glu Lys Thr Ile
195 200 205
Phe Ile Ile Phe Met Leu Val Val Ser Leu Val Ser Leu Ala Leu Asn
210 215 220

Ile Ile Glu Leu Phe Tyr Val Phe Phe Lys Gly Val Lys Asp Arg Val
 225 230 235 240

Lys Gly Lys Ser Asp Pro Tyr His Ala Thr Ser Gly Ala Leu Ser Pro
 245 250 255

Ala Lys Asp Cys Gly Ser Gln Lys Tyr Ala Tyr Phe Asn Gly Cys Ser
 260 265 270

Ser Pro Thr Ala Pro Leu Ser Pro Met Ser Pro Pro Gly Tyr Lys Leu
 275 280 285

Val Thr Gly Asp Arg Asn Asn Ser Ser Cys Arg Asn Tyr Asn Lys Gln
 290 295 300

Ala Ser Glu Gln Asn Trp Ala Asn Tyr Ser Ala Glu Gln Asn Arg Met
 305 310 315 320

Gly Gln Ala Gly Ser Thr Ile Ser Asn Ser His Ala Gln Pro Phe Asp
 325 330 335

Phe Pro Asp Asp Asn Gln Asn Ser Lys Lys Leu Ala Ala Gly His Glu
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Leu Gln Pro Leu Ala Ile Val Asp Gln Arg Pro Ser Ser Arg Ala Ser
 355 360 365

Ser Arg Ala Ser Ser Arg Pro Arg Pro Asp Asp Leu Glu Ile
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 attttacttc atcctccaag gagttcaatc acttggcgtg acttcactac ttttaagcaa 180
 aagagtgggtg cccaggcaac atg ggt gac tgg agc gcc tta ggc aaa ctc ctt 233
 Met Gly Asp Trp Ser Ala Leu Gly Lys Leu Leu
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 gac aag gtt caa gcc tac tca act gct gga ggg aag gtg tgg ctg tca 281
 Asp Lys Val Gln Ala Tyr Ser Thr Ala Gly Gly Lys Val Trp Leu Ser
 15 20 25
 gta ctt ttc att ttc cga atc ctg ctg ctg ggg aca gcg gtt gag tca 329

Val Leu Phe Ile Phe Arg Ile Leu Leu Leu Gly Thr Ala Val Glu Ser
30 35 40

gcc tgg gga gat gag cag tct gcc ttt cgt tgt aac act cag caa cct 377
Ala Trp Gly Asp Glu Gln Ser Ala Phe Arg Cys Asn Thr Gln Gln Pro
45 50 55

ggt tgt gaa aat gtc tgc tat gac aag tct ttc cca atc tct cat gtg 425
Gly Cys Glu Asn Val Cys Tyr Asp Lys Ser Phe Pro Ile Ser His Val
60 65 70 75

cgc ttc tgg gtc ctg cag atc ata ttt gtg tct gta ccc aca ctc ttg 473
Arg Phe Trp Val Leu Gln Ile Ile Phe Val Ser Val Pro Thr Leu Leu
80 85 90

tac ctg gct cat gtg ttc tat gtg atg cga aag gaa gag aaa ctg aac 521
Tyr Leu Ala His Val Phe Tyr Val Met Arg Lys Glu Glu Lys Leu Asn
95 100 105

aag aaa gag gaa gaa ctc aag gtt gcc caa act gat ggt gtc aat gtg 569
Lys Lys Glu Glu Glu Leu Lys Val Ala Gln Thr Asp Gly Val Asn Val
110 115 120

gac atg cac ttg aag cag att gag ata aag aag ttc aag tac ggt att 617
Asp Met His Leu Lys Gln Ile Glu Ile Lys Lys Phe Lys Tyr Gly Ile
125 130 135

gaa gag cat ggt aag gtg aaa atg cga ggg ggg ttg ctg cga acc tac 665
Glu Glu His Gly Lys Val Lys Met Arg Gly Gly Leu Leu Arg Thr Tyr
140 145 150 155

atc atc agt atc ctc ttc aag tct atc ttt gag gtg gcc ttc ttg ctg 713
Ile Ile Ser Ile Leu Phe Lys Ser Ile Phe Glu Val Ala Phe Leu Leu
160 165 170

atc cag tgg tac atc tat gga ttc agc ttg agt gct gtt tac act tgc 761
Ile Gln Trp Tyr Ile Tyr Gly Phe Ser Leu Ser Ala Val Tyr Thr Cys
175 180 185

aaa aga gat ccc tgc cca cat cag gtg gac tgt ttc ctc tct cgc ccc 809
Lys Arg Asp Pro Cys Pro His Gln Val Asp Cys Phe Leu Ser Arg Pro
190 195 200

acg gag aaa acc atc ttc atc atc ttc atg ctg gtg gtg tcc ttg gtg 857
Thr Glu Lys Thr Ile Phe Ile Ile Phe Met Leu Val Val Ser Leu Val
205 210 215

tcc ctg gcc ttg aat atc att gaa ctc ttc tat gtt ttc ttc aag ggc 905
Ser Leu Ala Leu Asn Ile Ile Glu Leu Phe Tyr Val Phe Phe Lys Gly
220 225 230 235

gtt aag gat cgg gtt aag gga aag agc gac cct tac cat gcg acc agt 953
Val Lys Asp Arg Val Lys Gly Lys Ser Asp Pro Tyr His Ala Thr Ser
240 245 250

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Gly Ala Leu Ser Pro Ala Lys Asp Cys Gly Ser Gln Lys Tyr Ala Tyr

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Phe Asn Gly Cys Ser Ser Pro Thr Ala Pro Leu Ser Pro Met Ser Pro			
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Pro Gly Tyr Lys Leu Val Thr Gly Asp Arg Asn Asn Ser Ser Cys Arg			
285	290	295	
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Asn Tyr Asn Lys Gln Ala Ser Glu Gln Asn Trp Ala Asn Tyr Ser Ala			
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Glu Gln Asn Arg Met Gly Gln Ala Gly Ser Thr Ile Ser Asn Ser His			
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tagacctagt ccatcagatc atgtgttctg gagagtgttc tttattcaat aaagttttta 3066
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<210> 117
<211> 398
<212> PRT
<213> Homo sapiens
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<400> 117
Met Glu Gly Ala Ala Leu Leu Arg Val Ser Val Leu Cys Ile Trp Met
  1                      5                      10                      15

Ser Ala Leu Phe Leu Gly Val Gly Val Arg Ala Glu Glu Ala Gly Ala
  20                      25                      30

Arg Val Gln Gln Asn Val Pro Ser Gly Thr Asp Thr Gly Asp Pro Gln
  35                      40                      45

Ser Lys Pro Leu Gly Asp Trp Ala Ala Gly Thr Met Asp Pro Glu Ser
  50                      55                      60

Ser Ile Phe Ile Glu Asp Ala Ile Lys Tyr Phe Lys Glu Lys Val Ser
  65                      70                      75                      80

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Leu Asn Asn Asn Tyr Lys Ile Leu Gln Ala Asp Gln Glu Leu
 385 390 395

<210> 118
 <211> 2054
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (76)..(1269)

<400> 118
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 aggccttgca gcgac atg gag gga gct gct ttg ctg aga gtc tct gtc ctc 111
 Met Glu Gly Ala Ala Leu Leu Arg Val Ser Val Leu
 1 5 10
 tgc atc tgg atg agt gca ctt ttc ctt ggt gtg gga gtg agg gca gag 159
 Cys Ile Trp Met Ser Ala Leu Phe Leu Gly Val Gly Val Arg Ala Glu
 15 20 25
 gaa gct gga gcg agg gtg caa caa aac gtt cca agt ggg aca gat act 207
 Glu Ala Gly Ala Arg Val Gln Gln Asn Val Pro Ser Gly Thr Asp Thr
 30 35 40
 gga gat cct caa agt aag ccc ctc ggt gac tgg gct gct ggc acc atg 255
 Gly Asp Pro Gln Ser Lys Pro Leu Gly Asp Trp Ala Ala Gly Thr Met
 45 50 55 60
 gac cca gag agc agt atc ttt att gag gat gcc att aag tat ttc aag 303
 Asp Pro Glu Ser Ser Ile Phe Ile Glu Asp Ala Ile Lys Tyr Phe Lys
 65 70 75
 gaa aaa gtg agc aca cag aat ctg cta ctc ctg ctg act gat aat gag 351
 Glu Lys Val Ser Thr Gln Asn Leu Leu Leu Leu Thr Asp Asn Glu
 80 85 90
 gcc tgg aac gga ttc gtg gct gct gct gaa ctg ccc agg aat gag gca 399
 Ala Trp Asn Gly Phe Val Ala Ala Ala Glu Leu Pro Arg Asn Glu Ala
 95 100 105
 gat gag ctc cgt aaa gct ctg gac aac ctt gca aga caa atg atc atg 447
 Asp Glu Leu Arg Lys Ala Leu Asp Asn Leu Ala Arg Gln Met Ile Met
 110 115 120
 aaa gac aaa aac tgg cac gat aaa ggc cag cag tac aga aac tgg ttt 495
 Lys Asp Lys Asn Trp His Asp Lys Gly Gln Gln Tyr Arg Asn Trp Phe
 125 130 135 140
 ctg aaa gag ttt cct cgg ttg aaa agt aag ctt gag gat aac ata aga 543
 Leu Lys Glu Phe Pro Arg Leu Lys Ser Lys Leu Glu Asp Asn Ile Arg
 145 150 155
 agg ctc cgt gcc ctt gca gat ggg gtt cag aag gtc cac aaa ggc acc 591

Arg	Leu	Arg	Ala	Leu	Ala	Asp	Gly	Val	Gln	Lys	Val	His	Lys	Gly	Thr		
			160					165					170				
acc	atc	gcc	aat	gtg	gtg	tct	ggc	tct	ctc	agc	att	tcc	tct	ggc	atc	639	
Thr	Ile	Ala	Asn	Val	Val	Ser	Gly	Ser	Leu	Ser	Ile	Ser	Ser	Gly	Ile		
		175					180				185						
ctg	acc	ctc	gtc	ggc	atg	ggg	ctg	gca	ccc	ttc	aca	gag	gga	ggc	agc	687	
Leu	Thr	Leu	Val	Gly	Met	Gly	Leu	Ala	Pro	Phe	Thr	Glu	Gly	Gly	Ser		
	190					195					200						
ctt	gta	ctc	ttg	gaa	cct	ggg	atg	gag	ttg	gga	atc	aca	gca	gct	ttg	735	
Leu	Val	Leu	Leu	Glu	Pro	Gly	Met	Glu	Leu	Gly	Ile	Thr	Ala	Ala	Leu		
205					210					215					220		
acc	ggg	att	acc	agc	agt	acc	ata	gac	tac	gga	aag	aag	tgg	tgg	aca	783	
Thr	Gly	Ile	Thr	Ser	Ser	Thr	Ile	Asp	Tyr	Gly	Lys	Lys	Trp	Trp	Thr		
			225					230						235			
caa	gcc	caa	gcc	cac	gac	ctg	gtc	atc	aaa	agc	ctt	gac	aaa	ttg	aag	831	
Gln	Ala	Gln	Ala	His	Asp	Leu	Val	Ile	Lys	Ser	Leu	Asp	Lys	Leu	Lys		
			240					245					250				
gag	gtg	aag	gag	ttt	ttg	ggg	gag	aac	ata	tcc	aac	ttt	ctt	tcc	tta	879	
Glu	Val	Lys	Glu	Phe	Leu	Gly	Glu	Asn	Ile	Ser	Asn	Phe	Leu	Ser	Leu		
	255					260						265					
gct	ggc	aat	act	tac	caa	ctc	aca	cga	ggc	att	ggg	aag	gac	atc	cgt	927	
Ala	Gly	Asn	Thr	Tyr	Gln	Leu	Thr	Arg	Gly	Ile	Gly	Lys	Asp	Ile	Arg		
	270				275						280						
gcc	ctc	aga	cga	gcc	aga	gcc	aat	ctt	cag	tca	gta	ccg	cat	gcc	tca	975	
Ala	Leu	Arg	Arg	Ala	Arg	Ala	Asn	Leu	Gln	Ser	Val	Pro	His	Ala	Ser		
285					290					295					300		
gcc	tca	cgc	ccc	cgg	gtc	act	gag	cca	atc	tca	gct	gaa	agc	ggg	gaa	1023	
Ala	Ser	Arg	Pro	Arg	Val	Thr	Glu	Pro	Ile	Ser	Ala	Glu	Ser	Gly	Glu		
			305						310					315			
cag	gtg	gag	aga	gtt	aat	gaa	ccc	agc	atc	ctg	gaa	atg	agc	aga	gga	1071	
Gln	Val	Glu	Arg	Val	Asn	Glu	Pro	Ser	Ile	Leu	Glu	Met	Ser	Arg	Gly		
			320					325					330				
gtc	aag	ctc	acg	gat	gtg	gcc	cct	gta	agc	ttc	ttt	ctt	gtg	ctg	gat	1119	
Val	Lys	Leu	Thr	Asp	Val	Ala	Pro	Val	Ser	Phe	Phe	Leu	Val	Leu	Asp		
		335					340					345					
gta	gtc	tac	ctc	gtg	tac	gaa	tca	aag	cac	tta	cat	gag	ggg	gca	aag	1167	
Val	Val	Tyr	Leu	Val	Tyr	Glu	Ser	Lys	His	Leu	His	Glu	Gly	Ala	Lys		
	350					355					360						
tca	gag	aca	gct	gag	gag	ctg	aag	aag	gtg	gct	cag	gag	ctg	gag	gag	1215	
Ser	Glu	Thr	Ala	Glu	Glu	Leu	Lys	Lys	Val	Ala	Gln	Glu	Leu	Glu	Glu		
365					370					375					380		
aag	cta	aac	att	ctc	aac	aat	aat	tat	aag	att	ctg	cag	gcg	gac	caa	1263	
Lys	Leu	Asn	Ile	Leu	Asn	Asn	Asn	Tyr	Lys	Ile	Leu	Gln	Ala	Asp	Gln		

385

390

395

gaa ctg tgaccacagg gcagggcagc caccaggaga gatatgcctg gcagggggcca 1319
 Glu Leu

ggacaaaatg caaacttttt ttttttctga gacagagtct tgctctgtcg ccaagttgca 1379

gtgagccgag atatcgccac tgcaactccag cctgggtgac agagcgagac tccatctcaa 1439

aaaaaaaaa aaaaagaata tattgacgga agaatagaga ggaggcttga aggaaccagc 1499

aatgagaagg ccaggaaaag aaagagctga aaatggagaa agcccaagag ttagaacagt 1559

tggatacagg agaagaaaca gcggctccac tacagâccca gccccagggt caatgtcctc 1619

cgaagaatga agtctttccc tggatgatgt cccctgccct gtctttccag catccactct 1679

cccttgctct cctggggggca tatctcagtc aggcagcggc ttcctgatga tggtcgttgg 1739

ggtggttgct atgtgatggg tcccctccag gttactaaag ggtgcatgtc cctgtcttga 1799

acactgaagg gcaggtggtg agccatggcc atggtcccca gctgaggagc aggtgtcctt 1859

gagaacccaa acttcccaga gagtatgtga gaaccaacca atgaaaacag tcccatcgct 1919

cttaccgggt aagtaaacag tcagaaaatt agcatgaaag cagtttagca ttggggaggaa 1979

gctcagatct ctagagctgt cttgtccccg cccaggattg acctgtgtaa gtcccaataa 2039

actcacctac tcatac 2054

<210> 119
 <211> 398
 <212> PRT
 <213> Homo sapiens

<400> 119
 Met Glu Gly Ala Ala Leu Leu Arg Val Ser Val Leu Cys Ile Trp Met
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Ser Ala Leu Phe Leu Gly Val Arg Val Arg Ala Glu Glu Ala Gly Ala
 20 25 30

Arg Val Gln Gln Asn Val Pro Ser Gly Thr Asp Thr Gly Asp Pro Gln
 35 40 45

Ser Lys Pro Leu Gly Asp Trp Ala Ala Gly Thr Met Asp Pro Glu Ser
 50 55 60

Ser Ile Phe Ile Glu Asp Ala Ile Lys Tyr Phe Lys Glu Lys Val Ser
 65 70 75 80

Thr Gln Asn Leu Leu Leu Leu Thr Asp Asn Glu Ala Trp Asn Gly
 85 90 95

Phe Val Ala Ala Ala Glu Leu Pro Arg Asn Glu Ala Asp Glu Leu Arg

Lys	Ala	Leu	Asp	Asn	Leu	Ala	Arg	Gln	Met	Ile	Met	Lys	Asp	Lys	Asn	
	115						120					125				
Trp	His	Asp	Lys	Gly	Gln	Gln	Tyr	Arg	Asn	Trp	Phe	Leu	Lys	Glu	Phe	
	130					135					140					
Pro	Arg	Leu	Lys	Ser	Lys	Leu	Glu	Asp	Asn	Ile	Arg	Arg	Leu	Arg	Ala	
	145				150					155					160	
Leu	Ala	Asp	Gly	Val	Gln	Lys	Val	His	Lys	Gly	Thr	Thr	Ile	Ala	Asn	
				165					170						175	
Val	Val	Ser	Gly	Ser	Leu	Ser	Ile	Ser	Ser	Gly	Ile	Leu	Thr	Leu	Val	
			180					185					190			
Gly	Met	Gly	Leu	Ala	Pro	Phe	Thr	Glu	Gly	Gly	Ser	Leu	Val	Leu	Leu	
	195						200					205				
Glu	Pro	Gly	Met	Glu	Leu	Gly	Ile	Thr	Ala	Ala	Leu	Thr	Gly	Ile	Thr	
	210					215					220					
Ser	Ser	Thr	Ile	Asp	Tyr	Gly	Lys	Lys	Trp	Trp	Thr	Gln	Ala	Gln	Ala	
	225				230					235					240	
His	Asp	Leu	Val	Ile	Lys	Ser	Leu	Asp	Lys	Leu	Lys	Glu	Val	Lys	Glu	
				245					250					255		
Phe	Leu	Gly	Glu	Asn	Ile	Ser	Asn	Phe	Leu	Ser	Leu	Ala	Gly	Asn	Thr	
			260					265					270			
Tyr	Gln	Leu	Thr	Arg	Gly	Ile	Gly	Lys	Asp	Ile	Arg	Ala	Leu	Arg	Arg	
		275					280					285				
Ala	Arg	Ala	Asn	Leu	Gln	Ser	Val	Pro	His	Ala	Ser	Ala	Ser	Arg	Pro	
	290					295					300					
Arg	Val	Thr	Glu	Pro	Ile	Ser	Ala	Glu	Ser	Gly	Glu	Gln	Val	Glu	Arg	
	305				310					315					320	
Val	Asn	Glu	Pro	Ser	Ile	Leu	Glu	Met	Ser	Arg	Gly	Val	Lys	Leu	Thr	
				325					330					335		
Asp	Val	Ala	Pro	Val	Ser	Phe	Phe	Leu	Val	Leu	Asp	Val	Val	Tyr	Leu	
			340					345					350			
Val	Tyr	Glu	Ser	Lys	His	Leu	His	Glu	Gly	Ala	Lys	Ser	Glu	Thr	Ala	
		355					360					365				
Glu	Glu	Leu	Lys	Lys	Val	Ala	Gln	Glu	Leu	Glu	Glu	Lys	Leu	Asn	Ile	
	370					375					380					
Leu	Asn	Asn	Asn	Tyr	Lys	Ile	Leu	Gln	Ala	Asp	Gln	Glu	Leu			
	385				390					395						

<210> 120
 <211> 2054
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (76)..(1269)

<400> 120
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 aggccctgca gcgac atg gag gga gct gct ttg ctg aga gtc tct gtc ctc 111
 Met Glu Gly Ala Ala Leu Leu Arg Val Ser Val Leu
 1 5 10
 tgc atc tgg atg agt gca ctt ttc ctt ggt gtg aga gtg agg gca gag 159
 Cys Ile Trp Met Ser Ala Leu Phe Leu Gly Val Arg Val Arg Ala Glu
 15 20 25
 gaa gct gga gcg agg gtg caa caa aac gtt cca agt ggg aca gat act 207
 Glu Ala Gly Ala Arg Val Gln Gln Asn Val Pro Ser Gly Thr Asp Thr
 30 35 40
 gga gat cct caa agt aag ccc ctc ggt gac tgg gct gct ggc acc atg 255
 Gly Asp Pro Gln Ser Lys Pro Leu Gly Asp Trp Ala Ala Gly Thr Met
 45 50 55 60
 gac cca gag agc agt atc ttt att gag gat gcc att aag tat ttc aag 303
 Asp Pro Glu Ser Ser Ile Phe Ile Glu Asp Ala Ile Lys Tyr Phe Lys
 65 70 75
 gaa aaa gtg agc aca cag aat ctg cta ctc ctg ctg act gat aat gag 351
 Glu Lys Val Ser Thr Gln Asn Leu Leu Leu Leu Leu Thr Asp Asn Glu
 80 85 90
 gcc tgg aac gga ttc gtg gct gct gct gaa ctg ccc agg aat gag gca 399
 Ala Trp Asn Gly Phe Val Ala Ala Glu Leu Pro Arg Asn Glu Ala
 95 100 105
 gat gag ctc cgt aaa gct ctg gac aac ctt gca aga caa atg atc atg 447
 Asp Glu Leu Arg Lys Ala Leu Asp Asn Leu Ala Arg Gln Met Ile Met
 110 115 120
 aaa gac aaa aac tgg cac gat aaa ggc cag cag tac aga aac tgg ttt 495
 Lys Asp Lys Asn Trp His Asp Lys Gly Gln Gln Tyr Arg Asn Trp Phe
 125 130 135 140
 ctg aaa gag ttt cct cggttg aaa agt aag ctt gag gat aac ata aga 543
 Leu Lys Glu Phe Pro Arg Leu Lys Ser Lys Leu Glu Asp Asn Ile Arg
 145 150 155
 agg ctc cgt gcc ctt gca gat ggg gtt cag aag gtc cac aaa ggc acc 591
 Arg Leu Arg Ala Leu Ala Asp Gly Val Gln Lys Val His Lys Gly Thr
 160 165 170
 acc atc gcc aat gtg gtg tct ggc tct ctc agc att tcc tct ggc atc 639

Thr Ile Ala Asn Val Val Ser Gly Ser Leu Ser Ile Ser Ser Gly Ile
 175 180 185

ctg acc ctc gtc ggc atg ggt ctg gca ccc ttc aca gag gga ggc agc 687
 Leu Thr Leu Val Gly Met Gly Leu Ala Pro Phe Thr Glu Gly Gly Ser
 190 195 200

ctt gta ctc ttg gaa cct ggg atg gag ttg gga atc aca gca gct ttg 735
 Leu Val Leu Leu Glu Pro Gly Met Glu Leu Gly Ile Thr Ala Ala Leu
 205 210 215 220

acc ggg att acc agc agt acc ata gac tac gga aag aag tgg tgg aca 783
 Thr Gly Ile Thr Ser Ser Thr Ile Asp Tyr Gly Lys Lys Trp Trp Thr
 225 230 235

caa gcc caa gcc cac gac ctg gtc atc aaa agc ctt gac aaa ttg aag 831
 Gln Ala Gln Ala His Asp Leu Val Ile Lys Ser Leu Asp Lys Leu Lys
 240 245 250

gag gtg aag gag ttt ttg ggt gag aac ata tcc aac ttt ctt tcc tta 879
 Glu Val Lys Glu Phe Leu Gly Glu Asn Ile Ser Asn Phe Leu Ser Leu
 255 260 265

gct ggc aat act tac caa ctc aca cga ggc att ggg aag gac atc cgt 927
 Ala Gly Asn Thr Tyr Gln Leu Thr Arg Gly Ile Gly Lys Asp Ile Arg
 270 275 280

gcc ctc aga cga gcc aga gcc aat ctt cag tca gta ccg cat gcc tca 975
 Ala Leu Arg Arg Ala Arg Ala Asn Leu Gln Ser Val Pro His Ala Ser
 285 290 295 300

gcc tca cgc ccc cgg gtc act gag cca atc tca gct gaa agc ggt gaa 1023
 Ala Ser Arg Pro Arg Val Thr Glu Pro Ile Ser Ala Glu Ser Gly Glu
 305 310 315

cag gtg gag aga gtt aat gaa ccc agc atc ctg gaa atg agc aga gga 1071
 Gln Val Glu Arg Val Asn Glu Pro Ser Ile Leu Glu Met Ser Arg Gly
 320 325 330

gtc aag ctc acg gat gtg gcc cct gta agc ttc ttt ctt gtg ctg gat 1119
 Val Lys Leu Thr Asp Val Ala Pro Val Ser Phe Phe Leu Val Leu Asp
 335 340 345

gta gtc tac ctc gtg tac gaa tca aag cac tta cat gag ggg gca aag 1167
 Val Val Tyr Leu Val Tyr Glu Ser Lys His Leu His Glu Gly Ala Lys
 350 355 360

tca gag aca gct gag gag ctg aag aag gtg gct cag gag ctg gag gag 1215
 Ser Glu Thr Ala Glu Glu Leu Lys Lys Val Ala Gln Glu Leu Glu Glu
 365 370 375 380

aag cta aac att ctc aac aat aat tat aag att ctg cag gcg gac caa 1263
 Lys Leu Asn Ile Leu Asn Asn Asn Tyr Lys Ile Leu Gln Ala Asp Gln
 385 390 395

gaa ctg tgaccacagg gcagggcagc caccaggaga gatatgcctg gcaggggccca 1319
 Glu Leu

ggacaaaatg caaacttttt ttttttctga gacagagtct tgctctgtcg ccaagttgca 1379
 gtgagccgag atatcgccac tgcactccag cctgggtgac agagcgagac tccatctcaa 1439
 aaaaaaaaaa aaaaagaata tattgacgga agaatagaga ggaggcttga aggaaccagc 1499
 aatgagaagg ccaggaaaag aaagagctga aaatggagaa agcccaagag ttagaacagt 1559
 tggatacagg agaagaaaca gcggctccac tacagaccca gccccagggt caatgtcttc 1619
 cgaagaatga agtctttccc tggatgatgt cccctgccct gtctttccag catccactct 1679
 cccttgctct cctgggggca tatctcagtc aggcagcggc ttcctgatga tggtcggttg 1739
 ggtggttgct atgtgatggg tcccctccag gttactaaag ggtgcatgtc ccctgcttga 1799
 aactgaagg gcagggtgtg agccatggcc atggtcccca gctgaggagc aggtgtccct 1859
 gagaacccaa acttcccaga gagtatgtga gaaccaacca atgaaaacag tcccatcgct 1919
 cttaccgggt aagtaaacag tcagaaaatt agcatgaaag cagtttagca ttgggaggaa 1979
 gctcagatct ctagagctgt cttgtccccg ccaggattg acctgtgtaa gtcccaataa 2039
 actcacctac tcatac 2054

<210> 121
 <211> 108
 <212> PRT
 <213> Homo sapiens

<400> 121
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 Pro Lys Arg Gly Gln Thr Cys Val Val His Tyr Thr Gly Met Leu Glu
 20 25 30
 Asp Gly Lys Lys Phe Asp Ser Ser Arg Asp Arg Asn Lys Pro Phe Lys
 35 40 45
 Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
 50 55 60
 Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
 65 70 75 80
 Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
 85 90 95
 Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu
 100 105

<210> 122

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 gagagatgtc tttaggggttaa attaaaagcc ctacctaaaa ctgaggtggg gatggggaga 992
 gcctttgcct ccaccattcc caccaccct ccccttaaac cctctgcctt tgaaagtaga 1052
 tcatgttcac tgcaatgctg gacactacag gtatctgtcc ctgggccagc agggacctct 1112
 gaagccttct ttgtggcctt tttttttttt tcatcctgtg gtttttctaa tggactttca 1172
 ggaattttgt aatctcataa ctttccaagc tccaccactt cctaaatctt aagaacttta 1232
 attgacagtt tcaattgaag gtgctgtttg tagacttaac acccagtgaag agcccagcca 1292
 tcatgacaaa tccttgaatg ttctcttaag aaaatgatgc tggatcatgc agcttcagca 1352
 tctcctgttt ttgatgctt ggctccctct gctgatctca gtttcctggc ttttctccc 1412
 tcagcccctt ctacccctt tgcgtcctg tgtagtatt tggtagagaaa tcgttgctgc 1472
 acccttcccc cagcaccatt tatgagtctc aagttttatt attgcaataa aagtgtttta 1532
 .tgccggcttt tctc 1546

<210> 123
 <211> 679
 <212> PRT
 <213> Homo sapiens

<400> 123
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 1 5 10 15
 Pro Leu Val Asp Tyr Leu Trp Met Leu Ile Leu Gly Phe Ile Ile Ala
 20 25 30
 Phe Val Leu Ala Phe Ser Val Gly Ala Asn Asp Val Ala Asn Ser Phe
 35 40 45
 Gly Thr Ala Val Gly Ser Gly Val Val Thr Leu Lys Gln Ala Cys Ile
 50 55 60
 Leu Ala Ser Ile Phe Glu Thr Val Gly Ser Val Leu Leu Gly Ala Lys
 65 70 75 80
 Val Ser Glu Thr Ile Arg Lys Gly Leu Ile Asp Val Glu Met Tyr Asn
 85 90 95
 Ser Thr Gln Gly Leu Leu Met Ala Gly Ser Val Ser Ala Met Phe Gly
 100 105 110
 Ser Ala Val Trp Gln Leu Val Ala Ser Phe Leu Lys Leu Pro Ile Ser
 115 120 125
 Gly Thr His Cys Ile Val Gly Ala Thr Ile Gly Phe Ser Leu Val Ala
 130 135 140

Lys Gly Gln Glu Gly Val Lys Trp Ser Glu Leu Ile Lys Ile Val Met
145 150 155 160
Ser Trp Phe Val Ser Pro Leu Leu Ser Gly Ile Met Ser Gly Ile Leu
165 170 175
Phe Phe Leu Val Arg Ala Phe Ile Leu His Lys Ala Asp Pro Val Pro
180 185 190
Asn Gly Leu Arg Ala Leu Pro Val Phe Tyr Ala Cys Thr Val Gly Ile
195 200 205
Asn Leu Phe Ser Ile Met Tyr Thr Gly Ala Pro Leu Leu Gly Phe Asp
210 215 220
Lys Leu Pro Leu Trp Gly Thr Ile Leu Ile Ser Val Gly Cys Ala Val
225 230 235 240
Phe Cys Ala Leu Ile Val Trp Phe Phe Val Cys Pro Arg Met Lys Arg
245 250 255
Lys Ile Glu Arg Glu Ile Lys Cys Ser Pro Ser Glu Ser Pro Leu Met
260 265 270
Glu Lys Lys Asn Ser Leu Lys Glu Asp His Glu Glu Thr Lys Leu Ser
275 280 285
Val Gly Asp Ile Glu Asn Lys His Pro Val Ser Glu Val Gly Pro Ala
290 295 300
Thr Val Pro Leu Gln Ala Val Val Glu Glu Arg Thr Val Ser Phe Lys
305 310 315 320
Leu Gly Asp Leu Glu Glu Ala Pro Glu Arg Glu Arg Leu Pro Ser Val
325 330 335
Asp Leu Lys Glu Glu Thr Ser Ile Asp Ser Thr Val Asn Gly Ala Val
340 345 350
Gln Leu Pro Asn Gly Asn Leu Val Gln Phe Ser Gln Ala Val Ser Asn
355 360 365
Gln Ile Asn Ser Ser Gly His Tyr Gln Tyr His Thr Val His Lys Asp
370 375 380
Ser Gly Leu Tyr Lys Glu Leu Leu His Lys Leu His Leu Ala Lys Val
385 390 395 400
Gly Asp Cys Met Gly Asp Ser Gly Asp Lys Pro Leu Arg Arg Asn Asn
405 410 415
Ser Tyr Thr Ser Tyr Thr Met Ala Ile Cys Gly Met Pro Leu Asp Ser
420 425 430
Phe Arg Ala Lys Glu Gly Glu Gln Lys Gly Glu Glu Met Glu Lys Leu
435 440 445

Thr Trp Pro Asn Ala Asp Ser Lys Lys Arg Ile Arg Met Asp Ser Tyr
 450 455 460
 Thr Ser Tyr Cys Asn Ala Val Ser Asp Leu His Ser Ala Ser Glu Ile
 465 470 475 480
 Asp Met Ser Val Lys Ala Glu Met Gly Leu Gly Asp Arg Lys Gly Ser
 485 490 495
 Asn Gly Ser Leu Glu Glu Trp Tyr Asp Gln Asp Lys Pro Glu Val Ser
 500 505 510
 Leu Leu Phe Gln Phe Leu Gln Ile Leu Thr Ala Cys Phe Gly Ser Phe
 515 520 525
 Ala His Gly Gly Asn Asp Val Ser Asn Ala Ile Gly Pro Leu Val Ala
 530 535 540
 Leu Tyr Leu Val Tyr Asp Thr Gly Asp Val Ser Ser Lys Val Ala Thr
 545 550 555 560
 Pro Ile Trp Leu Leu Leu Tyr Gly Gly Val Gly Ile Cys Val Gly Leu
 565 570 575
 Trp Val Trp Gly Arg Arg Val Ile Gln Thr Met Gly Lys Asp Leu Thr
 580 585 590
 Pro Ile Thr Pro Ser Ser Gly Phe Ser Ile Glu Leu Ala Ser Ala Leu
 595 600 605
 Thr Val Val Ile Ala Ser Asn Ile Gly Leu Pro Ile Ser Thr Thr His
 610 615 620
 Cys Lys Val Gly Ser Val Val Ser Val Gly Trp Leu Arg Ser Lys Lys
 625 630 635 640
 Ala Val Asp Trp Arg Leu Phe Arg Asn Ile Phe Met Ala Trp Phe Val
 645 650 655
 Thr Val Pro Ile Ser Gly Val Ile Ser Ala Ala Ile Met Ala Ile Phe
 660 665 670
 Arg Tyr Val Ile Leu Arg Met
 675

<210> 124
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<220>
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 <222> (81)..(2117)
 <400> 124

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Glu Met Glu Lys Leu Thr Trp Pro Asn Ala Asp Ser Lys Lys Arg Ile	
445 450 455	
cga atg gac agt tac acc agt tac tgc aat gct gtg tct gac ctt cac	1505
Arg Met Asp Ser Tyr Thr Ser Tyr Cys Asn Ala Val Ser Asp Leu His	
460 465 470 475	
tca gca tct gag ata gac atg agt gtc aag gca gag atg ggt cta ggt	1553
Ser Ala Ser Glu Ile Asp Met Ser Val Lys Ala Glu Met Gly Leu Gly	
480 485 490	
gac aga aaa gga agt aat ggc tct cta gaa gaa tgg tat gac cag gat	1601
Asp Arg Lys Gly Ser Asn Gly Ser Leu Glu Glu Trp Tyr Asp Gln Asp	
495 500 505	
aag cct gaa gtc tct ctc ctc ttc cag ttc ctg cag atc ctt aca gcc	1649
Lys Pro Glu Val Ser Leu Leu Phe Gln Phe Leu Gln Ile Leu Thr Ala	
510 515 520	
tgc ttt ggg tca ttc gcc cat ggt ggc aat gac gta agc aat gcc att	1697
Cys Phe Gly Ser Phe Ala His Gly Gly Asn Asp Val Ser Asn Ala Ile	
525 530 535	
ggg cct ctg gtt gct tta tat ttg gtt tat gac aca gga gat gtt tct	1745
Gly Pro Leu Val Ala Leu Tyr Leu Val Tyr Asp Thr Gly Asp Val Ser	
540 545 550 555	
tca aaa gtg gca aca cca ata tgg ctt cta ctc tat ggt ggt gtt ggt	1793
Ser Lys Val Ala Thr Pro Ile Trp Leu Leu Tyr Gly Gly Val Gly	
560 565 570	
atc tgt gtt ggt ctg tgg gtt tgg gga aga aga gtt atc cag acc atg	1841
Ile Cys Val Gly Leu Trp Val Trp Gly Arg Arg Val Ile Gln Thr Met	
575 580 585	
ggg aag gat ctg aca ccg atc aca ccc tct agt ggc ttc agt att gaa	1889
Gly Lys Asp Leu Thr Pro Ile Thr Pro Ser Ser Gly Phe Ser Ile Glu	
590 595 600	
ctg gca tct gcc ctc act gtg gtg att gca tca aat att ggc ctt ccc	1937
Leu Ala Ser Ala Leu Thr Val Val Ile Ala Ser Asn Ile Gly Leu Pro	
605 610 615	
atc agt aca aca cat tgt aaa gtg ggc tct gtt gtg tct gtt ggc tgg	1985
Ile Ser Thr Thr His Cys Lys Val Gly Ser Val Val Ser Val Gly Trp	
620 625 630 635	
ctc cgg tcc aag aag gct gtt gac tgg cgt ctc ttt cgt aac att ttt	2033
Leu Arg Ser Lys Lys Ala Val Asp Trp Arg Leu Phe Arg Asn Ile Phe	
640 645 650	
atg gcc tgg ttt gtc aca gtc cct att tct gga gtt atc agt gct gcc	2081
Met Ala Trp Phe Val Thr Val Pro Ile Ser Gly Val Ile Ser Ala Ala	
655 660 665	
atc atg gca atc ttc aga tat gtc atc ctc aga atg tgaagctggt	2127

100	105	110
Arg Tyr Val Lys Arg Leu His Glu Val Gly Arg Thr Glu Pro Glu Leu 115 120 125		
Leu Val Ala His Ala Tyr Thr Arg Tyr Leu Gly Asp Leu Ser Gly Gly 130 135 140		
Gln Val Leu Lys Lys Ile Ala Gln Lys Ala Leu Asp Leu Pro Ser Ser 145 150 155 160		
Gly Glu Gly Leu Ala Phe Phe Thr Phe Pro Asn Ile Ala Ser Ala Thr 165 170 175		
Lys Phe Lys Gln Leu Tyr Arg Ser Arg Met Asn Ser Leu Glu Met Thr 180 185 190		
Pro Ala Val Arg Gln Arg Val Ile Glu Glu Ala Lys Thr Ala Phe Leu 195 200 205		
Leu Asn Ile Gln Leu Phe Glu Glu Leu Gln Glu Leu Leu Thr His Asp 210 215 220		
Thr Lys Asp Gln Ser Pro Ser Arg Ala Pro Gly Leu Arg Gln Arg Ala 225 230 235 240		
Ser Asn Lys Val Gln Asp Ser Ala Pro Val Glu Thr Pro Arg Gly Lys 245 250 255		
Pro Pro Leu Asn Thr Arg Ser Gln Ala Pro Leu Leu Arg Trp Val Leu 260 265 270		
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<220>
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 acgagcccag caccggccgg atg gag cgt ccg caa ccc gac agc atg ccc cag 113
 Met Glu Arg Pro Gln Pro Asp Ser Met Pro Gln
 1 5 10
 gat ttg tca gag gcc ctg aag gag gcc acc aag gag gtg cac acc cag 161
 Asp Leu Ser Glu Ala Leu Lys Glu Ala Thr Lys Glu Val His Thr Gln
 15 20 25
 gca gag aat gct gag ttc atg agg aac ttt cag aag ggc cag gtg acc 209

Ala	Glu	Asn	Ala	Glu	Phe	Met	Arg	Asn	Phe	Gln	Lys	Gly	Gln	Val	Thr		
		30						35					40				
cga	gac	ggc	ttc	aag	ctg	gtg	atg	gcc	tcc	ctg	tac	cac	atc	tat	gtg	257	
Arg	Asp	Gly	Phe	Lys	Leu	Val	Met	Ala	Ser	Leu	Tyr	His	Ile	Tyr	Val		
	45					50					55						
gcc	ctg	gag	gag	gag	att	gag	cgc	aac	aag	gag	agc	cca	gtc	ttc	gcc	305	
Ala	Leu	Glu	Glu	Glu	Ile	Glu	Arg	Asn	Lys	Glu	Ser	Pro	Val	Phe	Ala		
	60				65					70					75		
cct	gtc	tac	ttc	cca	gaa	gag	ctg	cac	cgc	aag	gct	gcc	ctg	gag	cag	353	
Pro	Val	Tyr	Phe	Pro	Glu	Glu	Leu	His	Arg	Lys	Ala	Ala	Leu	Glu	Gln		
				80					85					90			
gac	ctg	gcc	ttc	tgg	tac	ggg	ccc	cgc	tgg	cag	gag	gtc	atc	ccc	tac	401	
Asp	Leu	Ala	Phe	Trp	Tyr	Gly	Pro	Arg	Trp	Gln	Glu	Val	Ile	Pro	Tyr		
			95					100					105				
aca	cca	gcc	atg	cag	cgc	tat	gtg	aag	cgg	ctc	cac	gag	gtg	ggg	cgc	449	
Thr	Pro	Ala	Met	Gln	Arg	Tyr	Val	Lys	Arg	Leu	His	Glu	Val	Gly	Arg		
		110					115					120					
aca	gag	ccc	gag	ctg	ctg	gtg	gcc	cac	gcc	tac	acc	cgc	tac	ctg	ggt	497	
Thr	Glu	Pro	Glu	Leu	Leu	Val	Ala	His	Ala	Tyr	Thr	Arg	Tyr	Leu	Gly		
	125					130					135						
gac	ctg	tct	ggg	ggc	cag	gtg	ctc	aaa	aag	att	gcc	cag	aaa	gcc	ctg	545	
Asp	Leu	Ser	Gly	Gly	Gln	Val	Leu	Lys	Lys	Ile	Ala	Gln	Lys	Ala	Leu		
	140				145					150					155		
gac	ctg	ccc	agc	tct	ggc	gag	ggc	ctg	gcc	ttc	ttc	acc	ttc	ccc	aac	593	
Asp	Leu	Pro	Ser	Ser	Gly	Glu	Gly	Leu	Ala	Phe	Phe	Thr	Phe	Pro	Asn		
				160					165					170			
att	gcc	agt	gcc	acc	aag	ttc	aag	cag	ctc	tac	cgc	tcc	cgc	atg	aac	641	
Ile	Ala	Ser	Ala	Thr	Lys	Phe	Lys	Gln	Leu	Tyr	Arg	Ser	Arg	Met	Asn		
			175					180					185				
tcc	ctg	gag	atg	act	ccc	gca	gtc	agg	cag	agg	gtg	ata	gaa	gag	gcc	689	
Ser	Leu	Glu	Met	Thr	Pro	Ala	Val	Arg	Gln	Arg	Val	Ile	Glu	Glu	Ala		
			190				195					200					
aag	act	gcg	ttc	ctg	ctc	aac	atc	cag	ctc	ttt	gag	gag	ttg	cag	gag	737	
Lys	Thr	Ala	Phe	Leu	Leu	Asn	Ile	Gln	Leu	Phe	Glu	Glu	Leu	Gln	Glu		
	205					210					215						
ctg	ctg	acc	cat	gac	acc	aag	gac	cag	agc	ccc	tca	cgg	gca	cca	ggg	785	
Leu	Leu	Thr	His	Asp	Thr	Lys	Asp	Gln	Ser	Pro	Ser	Arg	Ala	Pro	Gly		
	220				225					230					235		
ctt	cgc	cag	cgg	gcc	agc	aac	aaa	gtg	caa	gat	tct	gcc	ccc	gtg	gag	833	
Leu	Arg	Gln	Arg	Ala	Ser	Asn	Lys	Val	Gln	Asp	Ser	Ala	Pro	Val	Glu		
				240				245						250			
act	ccc	aga	ggg	aag	ccc	cca	ctc	aac	acc	cgc	tcc	cag	gct	cgg	ctt	881	
Thr	Pro	Arg	Gly	Lys	Pro	Pro	Leu	Asn	Thr	Arg	Ser	Gln	Ala	Pro	Leu		

255 260 265
 ctc cga tgg gtc ctt aca ctc agc ttt ctg gtg gcg aca gtt gct gta . 929
 Leu Arg Trp Val Leu Thr Leu Ser Phe Leu Val Ala Thr Val Ala Val
 270 275 280
 ggg ctt tat gcc atg tgaatgcagg catgctggct cccagggcca tgaactttgt 984
 Gly Leu Tyr Ala Met
 285
 ccggtggaag gccttctttc tagagagggga attctcttgg ctggcttcct taccgtgggc 1044
 actgaaggct ttcagggcct ccagccctct cactgtgtcc ctctctctgg aaaggaggaa 1104
 ggagcctatg gcatcttccc caacgaaaag cacatccagg caatggccta aacttcagag 1164
 ggggcgaagg ggtcagccct gcccttcagc atcctcagtt cctgcagcag agcctggaag 1224
 acacccta atgtggcagctg tctcaaacct ccaaaagccc tgagtttcaa gtatccttgt 1284
 tgacacggcc atgaccactt tccccgtggg ccatggcaat ttttacacaa acctgaaaag 1344
 atgttggtgc ttgtgttttt gtcttatttt tgttgagacc actctgttcc tggctcagcc 1404
 tcaa atgcag tatttttgggt gtgttctggt gtttttatag cagggttggg gtggtttttg 1464
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 tgtgaaataa taaacaacat tgtctg 1550

 <210> 127
 <211> 135
 <212> PRT
 <213> Homo sapiens

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 Cys Leu Arg Val Arg Gly Glu Val Ala Pro Asp Ala Lys Ser Phe Val
 20 25 30
 Leu Asn Leu Gly Lys Asp Ser Asn Asn Leu Cys Leu His Phe Asn Pro
 35 40 45
 Arg Phe Asn Ala His Gly Asp Ala Asn Thr Ile Val Cys Asn Ser Lys
 50 55 60
 Asp Gly Gly Ala Trp Gly Thr Glu Gln Arg Glu Ala Val Phe Pro Phe
 65 70 75 80
 Gln Pro Gly Ser Val Ala Glu Val Cys Ile Thr Phe Asp Gln Ala Asn
 85 90 95
 Leu Thr Val Lys Leu Pro Asp Gly Tyr Glu Phe Lys Phe Pro Asn Arg
 100 105 110

Leu Asn Leu Glu Ala Ile Asn Tyr Met Ala Ala Asp Gly Asp Phe Lys
 115 120 125

Ile Lys Cys Val Ala Phe Asp
 130 135

<210> 128
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 <212> DNA
 <213> Homo sapiens

<220>
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<400> 128
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 Met Ala Cys
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ggt ctg gtc gcc agc aac ctg aat ctc aaa cct gga gag tgc ctt cga 106
 Gly Leu Val Ala Ser Asn Leu Asn Leu Lys Pro Gly Glu Cys Leu Arg
 5 10 15

gtg cga ggc gag gtg gct cct gac gct aag agc ttc gtg ctg aac ctg 154
 Val Arg Gly Glu Val Ala Pro Asp Ala Lys Ser Phe Val Leu Asn Leu
 20 25 30 35

ggc aaa gac agc aac aac ctg tgc ctg cac ttc aac cct cgc ttc aac 202
 Gly Lys Asp Ser Asn Asn Leu Cys Leu His Phe Asn Pro Arg Phe Asn
 40 45 50

gcc cac ggc gac gcc aac acc atc gtg tgc aac agc aag gac ggc ggc 250
 Ala His Gly Asp Ala Asn Thr Ile Val Cys Asn Ser Lys Asp Gly Gly
 55 60 65

gcc tgg ggg acc gag cag cgg gag gct gtc ttt ccc ttc cag cct gga 298
 Ala Trp Gly Thr Glu Gln Arg Glu Ala Val Phe Pro Phe Gln Pro Gly
 70 75 80

agt gtt gca gag gtg tgc atc acc ttc gac cag gcc aac ctg acc gtc 346
 Ser Val Ala Glu Val Cys Ile Thr Phe Asp Gln Ala Asn Leu Thr Val
 85 90 95

aag ctg cca gat gga tac gaa ttc aag ttc ccc aac cgc ctc aac ctg 394
 Lys Leu Pro Asp Gly Tyr Glu Phe Lys Phe Pro Asn Arg Leu Asn Leu
 100 105 110 115

gag gcc atc aac tac atg gca gct gac ggt gac ttc aag atc aaa tgt 442
 Glu Ala Ile Asn Tyr Met Ala Ala Asp Gly Asp Phe Lys Ile Lys Cys
 120 125 130

gtg gcc ttt gac tgaaatcagc cagcccatgg cccccaataa aggcagctgc 494
 Val Ala Phe Asp
 135

ctctgctccc ctg

507

<210> 129
<211> 662
<212> PRT
<213> Homo sapiens

<400> 129
Met Asn Lys Glu Ile Pro Asn Gly Asn Thr Ser Glu Leu Ile Phe Asn
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Ala Val His Val Lys Asp Ala Gly Phe Tyr Val Cys Arg Val Asn Asn
20 25 30
Asn Phe Thr Phe Glu Phe Ser Gln Trp Ser Gln Leu Asp Val Cys Asp
35 40 45
Ile Pro Glu Ser Phe Gln Arg Ser Val Asp Gly Val Ser Glu Ser Lys
50 55 60
Leu Gln Ile Cys Val Glu Pro Thr Ser Gln Lys Leu Met Pro Gly Ser
65 70 75 80
Thr Leu Val Leu Gln Cys Val Ala Val Gly Ser Pro Ile Pro His Tyr
85 90 95
Gln Trp Phe Lys Asn Glu Leu Pro Leu Thr His Glu Thr Lys Lys Leu
100 105 110
Tyr Met Val Pro Tyr Val Asp Leu Glu His Gln Gly Thr Tyr Trp Cys
115 120 125
His Val Tyr Asn Asp Arg Asp Ser Gln Asp Ser Lys Lys Val Glu Ile
130 135 140
Ile Ile Gly Arg Thr Asp Glu Ala Val Glu Cys Thr Glu Asp Glu Leu
145 150 155 160
Asn Asn Leu Gly His Pro Asp Asn Lys Glu Gln Thr Thr Asp Gln Pro
165 170 175
Leu Ala Lys Asp Lys Val Ala Leu Leu Ile Gly Asn Met Asn Tyr Arg
180 185 190
Glu His Pro Lys Leu Lys Ala Pro Leu Val Asp Val Tyr Glu Leu Thr
195 200 205
Asn Leu Leu Arg Gln Leu Asp Phe Lys Val Val Ser Leu Leu Asp Leu
210 215 220
Thr Glu Tyr Glu Met Arg Asn Ala Val Asp Glu Phe Leu Leu Leu Leu
225 230 235 240
Asp Lys Gly Val Tyr Gly Leu Leu Tyr Tyr Ala Gly His Gly Tyr Glu
245 250 255

Asn	Phe	Gly	Asn	Ser	Phe	Met	Val	Pro	Val	Asp	Ala	Pro	Asn	Pro	Tyr	
			260						265					270		
Arg	Ser	Glu	Asn	Cys	Leu	Cys	Val	Gln	Asn	Ile	Leu	Lys	Leu	Met	Gln	
		275					280					285				
Glu	Lys	Glu	Thr	Gly	Leu	Asn	Val	Phe	Leu	Leu	Asp	Met	Cys	Arg	Lys	
		290				295					300					
Arg	Asn	Asp	Tyr	Asp	Asp	Thr	Ile	Pro	Ile	Leu	Asp	Ala	Leu	Lys	Val	
305					310					315					320	
Thr	Ala	Asn	Ile	Val	Phe	Gly	Tyr	Ala	Thr	Cys	Gln	Gly	Ala	Glu	Ala	
				325					330					335		
Phe	Glu	Ile	Gln	His	Ser	Gly	Leu	Ala	Asn	Gly	Ile	Phe	Met	Lys	Phe	
			340					345					350			
Leu	Lys	Asp	Arg	Leu	Leu	Glu	Asp	Lys	Lys	Ile	Thr	Val	Leu	Leu	Asp	
		355					360					365				
Glu	Val	Ala	Glu	Asp	Met	Gly	Lys	Cys	His	Leu	Thr	Lys	Gly	Lys	Gln	
		370				375					380					
Ala	Leu	Glu	Ile	Arg	Ser	Ser	Leu	Ser	Glu	Lys	Arg	Ala	Leu	Thr	Asp	
385					390					395					400	
Pro	Ile	Gln	Gly	Thr	Glu	Tyr	Ser	Ala	Glu	Ser	Leu	Val	Arg	Asn	Leu	
				405					410					415		
Gln	Trp	Ala	Lys	Ala	His	Glu	Leu	Pro	Glu	Ser	Met	Cys	Leu	Lys	Phe	
			420					425					430			
Asp	Cys	Gly	Val	Gln	Ile	Gln	Leu	Gly	Phe	Ala	Ala	Glu	Phe	Ser	Asn	
		435					440					445				
Val	Met	Ile	Ile	Tyr	Thr	Ser	Ile	Val	Tyr	Lys	Pro	Pro	Glu	Ile	Ile	
	450					455					460					
Met	Cys	Asp	Ala	Tyr	Val	Thr	Asp	Phe	Pro	Leu	Asp	Leu	Asp	Ile	Asp	
465					470					475					480	
Pro	Lys	Asp	Ala	Asn	Lys	Gly	Thr	Pro	Glu	Glu	Thr	Gly	Ser	Tyr	Leu	
				485					490					495		
Val	Ser	Lys	Asp	Leu	Pro	Lys	His	Cys	Leu	Tyr	Thr	Arg	Leu	Ser	Ser	
			500					505					510			
Leu	Gln	Lys	Leu	Lys	Glu	His	Leu	Val	Phe	Thr	Val	Cys	Leu	Ser	Tyr	
		515					520					525				
Gln	Tyr	Ser	Gly	Leu	Glu	Asp	Thr	Val	Glu	Asp	Lys	Gln	Glu	Val	Asn	
		530				535					540					
Val	Gly	Lys	Pro	Leu	Ile	Ala	Lys	Leu	Asp	Met	His	Arg	Gly	Leu	Gly	
545					550					555					560	

Arg Lys Thr Cys Phe Gln Thr Cys Leu Met Ser Asn Gly Pro Tyr Gln
565 570 575

Ser Ser Ala Ala Thr Ser Gly Gly Ala Gly His Tyr His Ser Leu Gln
580 585 590

Asp Pro Phe His Gly Val Tyr His Ser His Pro Gly Asn Pro Ser Asn
595 600 605

Val Thr Pro Ala Asp Ser Cys His Cys Ser Arg Thr Pro Asp Ala Phe
610 615 620

Ile Ser Ser Phe Ala His His Ala Ser Cys His Phe Ser Arg Ser Asn
625 630 635 640

Val Pro Val Glu Thr Thr Asp Glu Ile Pro Phe Ser Phe Ser Asp Arg
645 650 655

Leu Arg Ile Ser Glu Lys
660

<210> 130
<211> 2251
<212> DNA
<213> Homo sapiens

<220>
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<222> (74)..(2059)

<400> 130
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tcagtgggttc aaa atg aat aaa gag att cca aat gga aat aca tca gag 109
Met Asn Lys Glu Ile Pro Asn Gly Asn Thr Ser Glu
1 5 10

ctt att ttt aat gca gtg cat gta aaa gat gca ggc ttt tat gtc tgt 157
Leu Ile Phe Asn Ala Val His Val Lys Asp Ala Gly Phe Tyr Val Cys
15 20 25

cga gtt aat aac aat ttc acc ttt gaa ttc agc cag tgg tca cag ctg 205
Arg Val Asn Asn Asn Phe Thr Phe Glu Phe Ser Gln Trp Ser Gln Leu
30 35 40

gat gtt tgc gac atc cca gag agc ttc cag aga agt gtt gat ggc gtc 253
Asp Val Cys Asp Ile Pro Glu Ser Phe Gln Arg Ser Val Asp Gly Val
45 50 55 60

tct gaa tcc aag ttg caa atc tgt gtt gaa cca act tcc caa aag ctg 301
Ser Glu Ser Lys Leu Gln Ile Cys Val Glu Pro Thr Ser Gln Lys Leu
65 70 75

atg cca ggc agc aca ttg gtt tta cag tgt gtt gct gtt gga agc cct 349
Met Pro Gly Ser Thr Leu Val Leu Gln Cys Val Ala Val Gly Ser Pro

[illegible]

gca cta aaa gtc acc gcc aat att gtg ttt gga tat gcc acg tgt caa	1069
Ala Leu Lys Val Thr Ala Asn Ile Val Phe Gly Tyr Ala Thr Cys Gln	
320 325 330	
gga gca gaa gct ttt gaa atc cag cat tct gga ttg gca aat gga atc	1117
Gly Ala Glu Ala Phe Glu Ile Gln His Ser Gly Leu Ala Asn Gly Ile	
335 340 345	
ttt atg aaa ttt tta aaa gac aga tta tta gaa gat aag aaa atc act	1165
Phe Met Lys Phe Leu Lys Asp Arg Leu Leu Glu Asp Lys Lys Ile Thr	
350 355 360	
gtg tta ctg gat gaa gtt gca gaa gat atg ggt aag tgt cac ctt acc	1213
Val Leu Leu Asp Glu Val Ala Glu Asp Met Gly Lys Cys His Leu Thr	
365 370 375 380	
aaa ggc aaa cag gct cta gag att cga agt agt tta tct gag aag aga	1261
Lys Gly Lys Gln Ala Leu Glu Ile Arg Ser Ser Leu Ser Glu Lys Arg	
385 390 395	
gca ctt act gat cca ata cag gga aca gaa tat tct gct gaa tct ctt	1309
Ala Leu Thr Asp Pro Ile Gln Gly Thr Glu Tyr Ser Ala Glu Ser Leu	
400 405 410	
gtg cgg aat cta cag tgg gcc aag gct cat gaa ctt cca gaa agt atg	1357
Val Arg Asn Leu Gln Trp Ala Lys Ala His Glu Leu Pro Glu Ser Met	
415 420 425	
tgt ctt aag ttt gac tgt ggt gtt cag att caa tta gga ttt gca gct	1405
Cys Leu Lys Phe Asp Cys Gly Val Gln Ile Gln Leu Gly Phe Ala Ala	
430 435 440	
gag ttt tcc aat gtc atg atc atc tat aca agt ata gtt tac aaa cca	1453
Glu Phe Ser Asn Val Met Ile Ile Tyr Thr Ser Ile Val Tyr Lys Pro	
445 450 455 460	
ccg gag ata ata atg tgt gat gcc tac gtt act gat ttt cca ctt gat	1501
Pro Glu Ile Ile Met Cys Asp Ala Tyr Val Thr Asp Phe Pro Leu Asp	
465 470 475	
cta gat att gat cca aaa gat gca aat aaa ggc aca cct gaa gaa act	1549
Leu Asp Ile Asp Pro Lys Asp Ala Asn Lys Gly Thr Pro Glu Glu Thr	
480 485 490	
ggc agc tac ttg gta tca aag gat ctt ccc aag cat tgc ctc tat acc	1597
Gly Ser Tyr Leu Val Ser Lys Asp Leu Pro Lys His Cys Leu Tyr Thr	
495 500 505	
aga ctc agt tca ctg caa aaa tta aag gaa cat cta gtc ttc aca gta	1645
Arg Leu Ser Ser Leu Gln Lys Leu Lys Glu His Leu Val Phe Thr Val	
510 515 520	
tgt tta tca tat cag tac tca gga ttg gaa gat act gta gag gac aag	1693
Cys Leu Ser Tyr Gln Tyr Ser Gly Leu Glu Asp Thr Val Glu Asp Lys	
525 530 535 540	

cag gaa gtg aat gtt ggg aaa cct ctc att gct aaa tta gac atg cat 1741
 Gln Glu Val Asn Val Gly Lys Pro Leu Ile Ala Lys Leu Asp Met His
 545 550 555

cga ggt ttg gga agg aag act tgc ttt caa act tgt ctt atg tct aat 1789
 Arg Gly Leu Gly Arg Lys Thr Cys Phe Gln Thr Cys Leu Met Ser Asn
 560 565 570

ggt cct tac cag agt tct gca gcc acc tca gga gga gca ggg cat tat 1837
 Gly Pro Tyr Gln Ser Ser Ala Ala Thr Ser Gly Gly Ala Gly His Tyr
 575 580 585

cac tca ttg caa gac cca ttc cat ggt gtt tac cat tca cat cct ggt 1885
 His Ser Leu Gln Asp Pro Phe His Gly Val Tyr His Ser His Pro Gly
 590 595 600

aat cca agt aat gtt aca cca gca gat agc tgt cat tgc agc cgg act 1933
 Asn Pro Ser Asn Val Thr Pro Ala Asp Ser Cys His Cys Ser Arg Thr
 605 610 615 620

cca gat gca ttt att tca agt ttc gct cac cat gct tca tgt cat ttt 1981
 Pro Asp Ala Phe Ile Ser Ser Phe Ala His His Ala Ser Cys His Phe
 625 630 635

agt aga agt aat gtg cca gta gag aca act gat gaa ata cca ttt agt 2029
 Ser Arg Ser Asn Val Pro Val Glu Thr Thr Asp Glu Ile Pro Phe Ser
 640 645 650

ttc tct gac agg ctc aga att tct gaa aaa tgacctcctt gtttttgaaa 2079
 Phe Ser Asp Arg Leu Arg Ile Ser Glu Lys
 655 660

gtttagcataa ttttagatgc ctgtgaaata gtactgcact tacataaagt gagacattgt 2139

gaaaaggcaa atttgtatat gtagagaaag aatagtagta actgtttcat agcaaacttc 2199

aggactttga gatgttgaaa ttacattatt taattacaga cttcctcttt ct 2251

<210> 131
 <211> 824
 <212> PRT
 <213> Homo sapiens

<400> 131
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 20 25 30
 Leu Arg Glu Pro Leu Leu Arg Arg Leu Ser Glu Leu Leu Asp Gln Ala
 35 40 45
 Pro Glu Gly Arg Gly Trp Arg Arg Leu Ala Glu Leu Ala Gly Ser Arg
 50 55 60

Gly Arg Leu Arg Leu Ser Cys Leu Asp Leu Glu Gln Cys Ser Leu Lys
 65 70 75 80
 Val Leu Glu Pro Glu Gly Ser Pro Ser Leu Cys Leu Leu Lys Leu Met
 85 90 95
 Gly Glu Lys Gly Cys Thr Val Thr Glu Leu Ser Asp Phe Leu Gln Ala
 100 105 110
 Met Glu His Thr Glu Val Leu Gln Leu Leu Ser Pro Pro Gly Ile Lys
 115 120 125
 Ile Thr Val Asn Pro Glu Ser Lys Ala Val Leu Ala Gly Gln Phe Val
 130 135 140
 Lys Leu Cys Cys Arg Ala Thr Gly His Pro Phe Val Gln Tyr Gln Trp
 145 150 155 160
 Phe Lys Met Asn Lys Glu Ile Pro Asn Gly Asn Thr Ser Glu Leu Ile
 165 170 175
 Phe Asn Ala Val His Val Lys Asp Ala Gly Phe Tyr Val Cys Arg Val
 180 185 190
 Asn Asn Asn Phe Thr Phe Glu Phe Ser Gln Trp Ser Gln Leu Asp Val
 195 200 205
 Cys Asp Ile Pro Glu Ser Phe Gln Arg Ser Val Asp Gly Val Ser Glu
 210 215 220
 Ser Lys Leu Gln Ile Cys Val Glu Pro Thr Ser Gln Lys Leu Met Pro
 225 230 235 240
 Gly Ser Thr Leu Val Leu Gln Cys Val Ala Val Gly Ser Pro Ile Pro
 245 250 255
 His Tyr Gln Trp Phe Lys Asn Glu Leu Pro Leu Thr His Glu Thr Lys
 260 265 270
 Lys Leu Tyr Met Val Pro Tyr Val Asp Leu Glu His Gln Gly Thr Tyr
 275 280 285
 Trp Cys His Val Tyr Asn Asp Arg Asp Ser Gln Asp Ser Lys Lys Val
 290 295 300
 Glu Ile Ile Ile Gly Arg Thr Asp Glu Ala Val Glu Cys Thr Glu Asp
 305 310 315 320
 Glu Leu Asn Asn Leu Gly His Pro Asp Asn Lys Glu Gln Thr Thr Asp
 325 330 335
 Gln Pro Leu Ala Lys Asp Lys Val Ala Leu Leu Ile Gly Asn Met Asn
 340 345 350
 Tyr Arg Glu His Pro Lys Leu Lys Ala Pro Leu Val Asp Val Tyr Glu
 355 360 365

Leu Thr Asn Leu Leu Arg Gln Leu Asp Phe Lys Val Val Ser Leu Leu
 370 375 380
 Asp Leu Thr Glu Tyr Glu Met Arg Asn Ala Val Asp Glu Phe Leu Leu
 385 390 395 400
 Leu Leu Asp Lys Gly Val Tyr Gly Leu Leu Tyr Tyr Ala Gly His Gly
 405 410 415
 Tyr Glu Asn Phe Gly Asn Ser Phe Met Val Pro Val Asp Ala Pro Asn
 420 425 430
 Pro Tyr Arg Ser Glu Asn Cys Leu Cys Val Gln Asn Ile Leu Lys Leu
 435 440 445
 Met Gln Glu Lys Glu Thr Gly Leu Asn Val Phe Leu Leu Asp Met Cys
 450 455 460
 Arg Lys Arg Asn Asp Tyr Asp Asp Thr Ile Pro Ile Leu Asp Ala Leu
 465 470 475 480
 Lys Val Thr Ala Asn Ile Val Phe Gly Tyr Ala Thr Cys Gln Gly Ala
 485 490 495
 Glu Ala Phe Glu Ile Gln His Ser Gly Leu Ala Asn Gly Ile Phe Met
 500 505 510
 Lys Phe Leu Lys Asp Arg Leu Leu Glu Asp Lys Lys Ile Thr Val Leu
 515 520 525
 Leu Asp Glu Val Ala Glu Asp Met Gly Lys Cys His Leu Thr Lys Gly
 530 535 540
 Lys Gln Ala Leu Glu Ile Arg Ser Ser Leu Ser Glu Lys Arg Ala Leu
 545 550 555 560
 Thr Asp Pro Ile Gln Gly Thr Glu Tyr Ser Ala Glu Ser Leu Val Arg
 565 570 575
 Asn Leu Gln Trp Ala Lys Ala His Glu Leu Pro Glu Ser Met Cys Leu
 580 585 590
 Lys Phe Asp Cys Gly Val Gln Ile Gln Leu Gly Phe Ala Ala Glu Phe
 595 600 605
 Ser Asn Val Met Ile Ile Tyr Thr Ser Ile Val Tyr Lys Pro Pro Glu
 610 615 620
 Ile Ile Met Cys Asp Ala Tyr Val Thr Asp Phe Pro Leu Asp Leu Asp
 625 630 635 640
 Ile Asp Pro Lys Asp Ala Asn Lys Gly Thr Pro Glu Glu Thr Gly Ser
 645 650 655
 Tyr Leu Val Ser Lys Asp Leu Pro Lys His Cys Leu Tyr Thr Arg Leu
 660 665 670

Ser Ser Leu Gln Lys Leu Lys Glu His Leu Val Phe Thr Val Cys Leu
675 680 685

Ser Tyr Gln Tyr Ser Gly Leu Glu Asp Thr Val Glu Asp Lys Gln Glu
690 695 700

Val Asn Val Gly Lys Pro Leu Ile Ala Lys Leu Asp Met His Arg Gly
705 710 715 720

Leu Gly Arg Lys Thr Cys Phe Gln Thr Cys Leu Met Ser Asn Gly Pro
725 730 735

Tyr Gln Ser Ser Ala Ala Thr Ser Gly Gly Ala Gly His Tyr His Ser
740 745 750

Leu Gln Asp Pro Phe His Gly Val Tyr His Ser His Pro Gly Asn Pro
755 760 765

Ser Asn Val Thr Pro Ala Asp Ser Cys His Cys Ser Arg Thr Pro Asp
770 775 780

Ala Phe Ile Ser Ser Phe Ala His His Ala Ser Cys His Phe Ser Arg
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Ser Asn Val Pro Val Glu Thr Thr Asp Glu Ile Pro Phe Ser Phe Ser
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Asp Arg Leu Arg Ile Ser Glu Lys
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gggcgggagg gagccccggc agtccggggg cgccggcgag ggcc atg tcg ctg ttg 176
Met Ser Leu Leu
1

ggg gac ccg cta cag gcc ctg ccg ccc tcg gcc gcc ccc acg ggg ccg 224
Gly Asp Pro Leu Gln Ala Leu Pro Pro Ser Ala Ala Pro Thr Gly Pro
5 10 15 20

ctg ctg gcc cct ccg gcc gcc gcg acc ctc aac cgc ctg cgg gag ccg 272
Leu Leu Ala Pro Pro Ala Gly Ala Thr Leu Asn Arg Leu Arg Glu Pro
25 30 35

ctg ctg cgg agg ctc agc gag ctc ctg gat cag gcg ccc gag ggc cgg	320
Leu Leu Arg Arg Leu Ser Glu Leu Leu Asp Gln Ala Pro Glu Gly Arg	
40 45 50	
ggc tgg agg aga ctg gcg gag ctg gcg ggg agt cgc ggg cgc ctc cgc	368
Gly Trp Arg Arg Leu Ala Glu Leu Ala Gly Ser Arg Gly Arg Leu Arg	
55 60 65	
ctc agt tgc cta gac ctg gag cag tgt tct ctt aag gta ctg gag cct	416
Leu Ser Cys Leu Asp Leu Glu Gln Cys Ser Leu Lys Val Leu Glu Pro	
70 75 80	
gaa gga agc ccc agc ctg tgt ctg ctg aag tta atg ggt gaa aaa ggt	464
Glu Gly Ser Pro Ser Leu Cys Leu Leu Lys Leu Met Gly Glu Lys Gly	
85 90 95 100	
tgc aca gtc aca gaa ttg agt gat ttc ctg cag gct atg gaa cac act	512
Cys Thr Val Thr Glu Leu Ser Asp Phe Leu Gln Ala Met Glu His Thr	
105 110 115	
gaa gtt ctt cag ctt ctc agc ccc cca gga ata aag att act gta aac	560
Glu Val Leu Gln Leu Leu Ser Pro Pro Gly Ile Lys Ile Thr Val Asn	
120 125 130	
cca gag tca aag gca gtc ttg gct gga cag ttt gtg aaa ctg tgt tgc	608
Pro Glu Ser Lys Ala Val Leu Ala Gly Gln Phe Val Lys Leu Cys Cys	
135 140 145	
cgg gca act gga cat cct ttt gtt caa tat cag tgg ttc aaa atg aat	656
Arg Ala Thr Gly His Pro Phe Val Gln Tyr Gln Trp Phe Lys Met Asn	
150 155 160	
aaa gag att cca aat gga aat aca tca gag ctt att ttt aat gca gtg	704
Lys Glu Ile Pro Asn Gly Asn Thr Ser Glu Leu Ile Phe Asn Ala Val	
165 170 175 180	
cat gta aaa gat gca ggc ttt tat gtc tgt cga gtt aat aac aat ttc	752
His Val Lys Asp Ala Gly Phe Tyr Val Cys Arg Val Asn Asn Asn Phe	
185 190 195	
acc ttt gaa ttc agc cag tgg tca cag ctg gat gtt tgc gac atc cca	800
Thr Phe Glu Phe Ser Gln Trp Ser Gln Leu Asp Val Cys Asp Ile Pro	
200 205 210	
gag agc ttc cag aga agt gtt gat ggc gtc tct gaa tcc aag ttg caa	848
Glu Ser Phe Gln Arg Ser Val Asp Gly Val Ser Glu Ser Lys Leu Gln	
215 220 225	
atc tgt gtt gaa cca act tcc caa aag ctg atg cca ggc agc aca ttg	896
Ile Cys Val Glu Pro Thr Ser Gln Lys Leu Met Pro Gly Ser Thr Leu	
230 235 240	
gtt tta cag tgt gtt gct gtt gga agc cct att cct cac tac cag tgg	944
Val Leu Gln Cys Val Ala Val Gly Ser Pro Ile Pro His Tyr Gln Trp	
245 250 255 260	
ttc aaa aat gaa tta cca tta aca cat gag acc aaa aag cta tac atg	992

Phe Lys Asn Glu Leu Pro Leu Thr His Glu Thr Lys Lys Leu Tyr Met	
265 270 275	
gtg cct tat gtg gat ttg gaa cac caa gga acc tac tgg tgt cat gta	1040
Val Pro Tyr Val Asp Leu Glu His Gln Gly Thr Tyr Trp Cys His Val	
280 285 290	
tat aat gat cga gac agt caa gat agc aag aag gta gaa atc atc ata	1088
Tyr Asn Asp Arg Asp Ser Gln Asp Ser Lys Lys Val Glu Ile Ile Ile	
295 300 305	
gga aga aca gat gag gca gtg gag tgc act gaa gat gaa tta aat aat	1136
Gly Arg Thr Asp Glu Ala Val Glu Cys Thr Glu Asp Glu Leu Asn Asn	
310 315 320	
ctt ggt cat cct gat aat aaa gag caa aca act gac cag cct ttg gcg	1184
Leu Gly His Pro Asp Asn Lys Glu Gln Thr Thr Asp Gln Pro Leu Ala	
325 330 335 340	
aag gac aag gtt gcc ctt ttg ata gga aat atg aat tac cgg gag cac	1232
Lys Asp Lys Val Ala Leu Leu Ile Gly Asn Met Asn Tyr Arg Glu His	
345 350 355	
ccc aag ctc aaa gct cct ttg gtg gat gtg tac gaa ttg act aac tta	1280
Pro Lys Leu Lys Ala Pro Leu Val Asp Val Tyr Glu Leu Thr Asn Leu	
360 365 370	
ctg aga cag ctg gac ttc aaa gtg gtt tca ctg ttg gat ctt act gaa	1328
Leu Arg Gln Leu Asp Phe Lys Val Val Ser Leu Leu Asp Leu Thr Glu	
375 380 385	
tat gag atg cgt aat gct gtg gat gag ttt tta ctc ctt tta gac aag	1376
Tyr Glu Met Arg Asn Ala Val Asp Glu Phe Leu Leu Leu Leu Asp Lys	
390 395 400	
gga gta tat ggg tta tta tat tat gca gga cat ggt tat gaa aat ttt	1424
Gly Val Tyr Gly Leu Leu Tyr Tyr Ala Gly His Gly Tyr Glu Asn Phe	
405 410 415 420	
ggg aac agc ttc atg gtc ccc gtt gat gct cca aat cca tat agg tct	1472
Gly Asn Ser Phe Met Val Pro Val Asp Ala Pro Asn Pro Tyr Arg Ser	
425 430 435	
gaa aat tgt ctg tgt gta caa aat ata ctg aaa ttg atg caa gaa aaa	1520
Glu Asn Cys Leu Cys Val Gln Asn Ile Leu Lys Leu Met Gln Glu Lys	
440 445 450	
gaa act gga ctt aat gtg ttc tta ttg gat atg tgt agg aaa aga aat	1568
Glu Thr Gly Leu Asn Val Phe Leu Leu Asp Met Cys Arg Lys Arg Asn	
455 460 465	
gac tac gat gat acc att cca atc ttg gat gca cta aaa gtc acc gcc	1616
Asp Tyr Asp Asp Thr Ile Pro Ile Leu Asp Ala Leu Lys Val Thr Ala	
470 475 480	
aat att gtg ttt gga tat gcc acg tgt caa gga gca gaa gct ttt gaa	1664
Asn Ile Val Phe Gly Tyr Ala Thr Cys Gln Gly Ala Glu Ala Phe Glu	

485	490	495	500	
atc cag cat tct gga ttg gca aat gga atc ttt atg aaa ttt tta aaa				1712
Ile Gln His Ser Gly Leu Ala Asn Gly Ile Phe Met Lys Phe Leu Lys	505	510	515	
gac aga tta tta gaa gat aag aaa atc act gtg tta ctg gat gaa gtt				1760
Asp Arg Leu Leu Glu Asp Lys Lys Ile Thr Val Leu Leu Asp Glu Val	520	525	530	
gca gaa gat atg ggt aag tgt cac ctt acc aaa ggc aaa cag gct cta				1808
Ala Glu Asp Met Gly Lys Cys His Leu Thr Lys Gly Lys Gln Ala Leu	535	540	545	
gag att cga agt agt tta tct gag aag aga gca ctt act gat cca ata				1856
Glu Ile Arg Ser Ser Leu Ser Glu Lys Arg Ala Leu Thr Asp Pro Ile	550	555	560	
cag gga aca gaa tat tct gct gaa tct ctt gtg cgg aat cta cag tgg				1904
Gln Gly Thr Glu Tyr Ser Ala Glu Ser Leu Val Arg Asn Leu Gln Trp	565	570	575	580
gcc aag gct cat gaa ctt cca gaa agt atg tgt ctt aag ttt gac tgt				1952
Ala Lys Ala His Glu Leu Pro Glu Ser Met Cys Leu Lys Phe Asp Cys	585	590	595	
ggt gtt cag att caa tta gga ttt gca gct gag ttt tcc aat gtc atg				2000
Gly Val Gln Ile Gln Leu Gly Phe Ala Ala Glu Phe Ser Asn Val Met	600	605	610	
atc atc tat aca agt ata gtt tac aaa cca ccg gag ata ata atg tgt				2048
Ile Ile Tyr Thr Ser Ile Val Tyr Lys Pro Pro Glu Ile Ile Met Cys	615	620	625	
gat gcc tac gtt act gat ttt cca ctt gat cta gat att gat cca aaa				2096
Asp Ala Tyr Val Thr Asp Phe Pro Leu Asp Leu Asp Ile Asp Pro Lys	630	635	640	
gat gca aat aaa ggc aca cct gaa gaa act ggc agc tac ttg gta tca				2144
Asp Ala Asn Lys Gly Thr Pro Glu Glu Thr Gly Ser Tyr Leu Val Ser	645	650	655	660
aag gat ctt ccc aag cat tgc ctc tat acc aga ctc agt tca ctg caa				2192
Lys Asp Leu Pro Lys His Cys Leu Tyr Thr Arg Leu Ser Ser Leu Gln	665	670	675	
aaa tta aag gaa cat cta gtc ttc aca gta tgt tta tca tat cag tac				2240
Lys Leu Lys Glu His Leu Val Phe Thr Val Cys Leu Ser Tyr Gln Tyr	680	685	690	
tca gga ttg gaa gat act gta gag gac aag cag gaa gtg aat gtt ggg				2288
Ser Gly Leu Glu Asp Thr Val Glu Asp Lys Gln Glu Val Asn Val Gly	695	700	705	
aaa cct ctc att gct aaa tta gac atg cat cga ggt ttg gga agg aag				2336
Lys Pro Leu Ile Ala Lys Leu Asp Met His Arg Gly Leu Gly Arg Lys	710	715	720	

act tgc ttt caa act tgt ctt atg tct aat ggt cct tac cag agt tct 2384
 Thr Cys Phe Gln Thr Cys Leu Met Ser Asn Gly Pro Tyr Gln Ser Ser
 725 730 735 740

gca gcc acc tca gga gga gca ggg cat tat cac tca ttg caa gac cca 2432
 Ala Ala Thr Ser Gly Gly Ala Gly His Tyr His Ser Leu Gln Asp Pro
 745 750 755

ttc cat ggt gtt tac cat tca cat cct ggt aat cca agt aat gtt aca 2480
 Phe His Gly Val Tyr His Ser His Pro Gly Asn Pro Ser Asn Val Thr
 760 765 770

cca gca gat agc tgt cat tgc agc cgg act cca gat gca ttt att tca 2528
 Pro Ala Asp Ser Cys His Cys Ser Arg Thr Pro Asp Ala Phe Ile Ser
 775 780 785

agt ttc gct cac cat gct tca tgt cat ttt agt aga agt aat gtg cca 2576
 Ser Phe Ala His His Ala Ser Cys His Phe Ser Arg Ser Asn Val Pro
 790 795 800

gta gag aca act gat gaa ata cca ttt agt ttc tct gac agg ctc aga 2624
 Val Glu Thr Thr Asp Glu Ile Pro Phe Ser Phe Ser Asp Arg Leu Arg
 805 810 815 820

att tct gaa aaa tgacctcctt gtttttgaaa gtttagcataa ttttagatgc 2676
 Ile Ser Glu Lys

ctgtgaaata gtactgcact tacataaagt gagacattgt gaaaaggcaa atttgtatat 2736

gtagagaaaag aatagtagta actgtttcat agcaaacttc aggactttga gatgttgaaa 2796

ttacattatt taattacaga cttcctcttt ct 2828

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Glu Val Ala Ser Ile Leu Gln Ala Asp Leu Gln Asn Gly Leu Asn Lys
 35 40 45

Cys Glu Val Ser His Arg Arg Ala Phe His Gly Trp Asn Glu Phe Asp
 50 55 60

Ile Ser Glu Asp Glu Pro Leu Trp Lys Lys Tyr Ile Ser Gln Phe Lys
 65 70 75 80

Asn Pro Leu Ile Met Leu Leu Leu Ala Ser Ala Val Ile Ser Val Leu

85										90					95				
Met	His	Gln	Phe	Asp	Asp	Ala	Val	Ser	Ile	Thr	Val	Ala	Ile	Leu	Ile				
			100					105					110						
Val	Val	Thr	Val	Ala	Phe	Val	Gln	Glu	Tyr	Arg	Ser	Glu	Lys	Ser	Leu				
		115					120					125							
Glu	Glu	Leu	Ser	Lys	Leu	Val	Pro	Pro	Glu	Cys	His	Cys	Val	Arg	Glu				
		130				135					140								
Gly	Lys	Leu	Glu	His	Thr	Leu	Ala	Arg	Asp	Leu	Val	Pro	Gly	Asp	Thr				
145					150				155						160				
Val	Cys	Leu	Ser	Val	Gly	Asp	Arg	Val	Pro	Ala	Asp	Leu	Arg	Leu	Phe				
				165				170						175					
Glu	Ala	Val	Asp	Leu	Ser	Ile	Asp	Glu	Ser	Ser	Leu	Thr	Gly	Glu	Thr				
			180					185					190						
Thr	Pro	Cys	Ser	Lys	Val	Thr	Ala	Pro	Gln	Pro	Ala	Ala	Thr	Asn	Gly				
		195					200					205							
Asp	Leu	Ala	Ser	Arg	Ser	Asn	Ile	Ala	Phe	Met	Gly	Thr	Leu	Val	Arg				
210						215					220								
Cys	Gly	Lys	Ala	Lys	Gly	Val	Val	Ile	Gly	Thr	Gly	Glu	Asn	Ser	Glu				
225					230					235					240				
Phe	Gly	Glu	Val	Phe	Lys	Met	Met	Gln	Ala	Glu	Glu	Ala	Pro	Lys	Thr				
			245					250						255					
Pro	Leu	Gln	Lys	Ser	Met	Asp	Leu	Leu	Gly	Lys	Gln	Leu	Ser	Phe	Tyr				
			260					265						270					
Ser	Phe	Gly	Ile	Ile	Gly	Ile	Ile	Met	Leu	Val	Gly	Trp	Leu	Leu	Gly				
		275					280					285							
Lys	Asp	Ile	Leu	Glu	Met	Phe	Thr	Ile	Ser	Val	Ser	Leu	Ala	Val	Ala				
		290				295					300								
Ala	Ile	Pro	Glu	Gly	Leu	Pro	Ile	Val	Val	Thr	Val	Thr	Leu	Ala	Leu				
305					310					315					320				
Gly	Val	Met	Arg	Met	Val	Lys	Lys	Arg	Ala	Ile	Val	Lys	Lys	Leu	Pro				
				325					330					335					
Ile	Val	Glu	Thr	Leu	Gly	Cys	Cys	Asn	Val	Ile	Cys	Ser	Asp	Lys	Thr				
			340					345					350						
Gly	Thr	Leu	Thr	Lys	Asn	Glu	Met	Thr	Val	Thr	His	Ile	Phe	Thr	Ser				
		355					360					365							
Asp	Gly	Leu	His	Ala	Glu	Val	Thr	Gly	Val	Gly	Tyr	Asn	Gln	Phe	Gly				
370						375					380								
Glu	Val	Ile	Val	Asp	Gly	Asp	Val	Val	His	Gly	Phe	Tyr	Asn	Pro	Ala				

385		390		395		400
Val Ser Arg Ile	Val Glu Ala Gly Cys	Val Cys Asn Asp Ala	Val Ile			
	405		410			415
Arg Asn Asn Thr	Leu Met Gly Lys	Pro Thr Glu Gly Ala	Leu Ile Ala			
	420		425			430
Leu Ala Met Lys	Met Gly Leu Asp Gly	Leu Gln Gln Asp Tyr	Ile Arg			
	435		440			445
Lys Ala Glu Tyr	Pro Phe Ser Ser	Glu Gln Lys Trp	Met Ala Val Lys			
	450		455			460
Cys Val His Arg	Thr Gln Gln Asp Arg	Pro Glu Ile Cys Phe	Met Lys			
	465		470			475
Gly Ala Tyr Glu	Gln Val Ile Lys Tyr	Cys Thr Thr Tyr Gln	Ser Lys			
	485		490			495
Gly Gln Thr Leu	Thr Leu Thr Gln Gln	Gln Arg Asp Val Tyr	Gln Gln			
	500		505			510
Glu Lys Ala Arg	Met Gly Ser Ala Gly	Leu Arg Val Leu	Ala Leu Ala			
	515		520			525
Ser Gly Pro Glu	Leu Gly Gln Leu Thr	Phe Leu Gly Leu	Val Gly Ile			
	530		535			540
Ile Asp Pro Pro	Arg Thr Gly Val Lys	Glu Ala Val Thr	Thr Leu Ile			
	545		550			555
Ala Ser Gly Val	Ser Ile Lys Met Ile	Thr Gly Asp Ser	Gln Glu Thr			
	565		570			575
Ala Val Ala Ile	Ala Ser Arg Leu Gly	Leu Tyr Ser Lys	Thr Ser Gln			
	580		585			590
Ser Val Ser Gly	Glu Glu Ile Asp Ala	Met Asp Val Gln	Gln Leu Ser			
	595		600			605
Gln Ile Val Pro	Lys Val Ala Val Phe	Tyr Arg Ala Ser	Pro Arg His			
	610		615			620
Lys Met Lys Ile	Ile Lys Ser Leu Gln	Lys Asn Gly Ser	Val Val Ala			
	625		630			635
Met Thr Gly Asp	Gly Val Asn Asp Ala	Val Ala Leu Lys	Ala Ala Asp			
	645		650			655
Ile Gly Val Ala	Met Gly Gln Thr Gly	Thr Asp Val Cys	Lys Glu Ala			
	660		665			670
Ala Asp Met Ile	Leu Val Asp Asp Asp	Phe Gln Thr Ile	Met Ser Ala			
	675		680			685
Ile Glu Glu Gly	Lys Gly Ile Tyr Asn	Asn Ile Lys Asn	Phe Val Arg			

690	695	700
Phe Gln Leu Ser Thr Ser Ile Ala Ala Leu Thr Leu Ile Ser Leu Ala		
705	710	715 720
Thr Leu Met Asn Phe Pro Asn Pro Leu Asn Ala Met Gln Ile Leu Trp		
	725	730 735
Ile Asn Ile Ile Met Asp Gly Pro Pro Ala Gln Ser Leu Gly Val Glu		
	740	745 750
Pro Val Asp Lys Asp Val Ile Arg Lys Pro Pro Arg Asn Trp Lys Asp		
	755	760 765
Ser Ile Leu Thr Lys Asn Leu Ile Leu Lys Ile Leu Val Ser Ser Ile		
	770	775 780
Ile Ile Val Cys Gly Thr Leu Phe Val Phe Trp Arg Glu Leu Arg Asp		
785	790	795 800
Asn Val Ile Thr Pro Arg Asp Thr Thr Met Thr Phe Thr Cys Phe Val		
	805	810 815
Phe Phe Asp Met Phe Asn Ala Leu Ser Ser Arg Ser Gln Thr Lys Ser		
	820	825 830
Val Phe Glu Ile Gly Leu Cys Ser Asn Arg Met Phe Cys Tyr Ala Val		
	835	840 845
Leu Gly Ser Ile Met Gly Gln Leu Leu Val Ile Tyr Phe Pro Pro Leu		
	850	855 860
Gln Lys Val Phe Gln Thr Glu Ser Leu Ser Ile Leu Asp Leu Leu Phe		
865	870	875 880
Leu Leu Gly Leu Thr Ser Ser Val Cys Ile Val Ala Glu Ile Ile Lys		
	885	890 895
Lys Val Glu Arg Ser Arg Glu Lys Ile Gln Lys His Val Ser Ser Thr		
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Ser Ser Ser Phe Leu Glu Val		
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 gagcaggctc ccgcctcgca ccgtgcccc gcgagcagct cctcttctcc cgaggcgccg 180
 gggggcgcgcc cgcgagcccc gcggctgaga ccccgccagcc tggaggaggg ctgtccgggg 240
 ctttggatgc tgctgctagg ggtggtggga gcagccgtgg gacgcgtggc cgggagcggg 300
 ggtgacagcc tgggattccg ggggcttctc ttccttgtcc tctcctctc ctctctatcc 360
 ccagtgtggc cgtggctgac actaaagact ttgtagccat caacccgagt gcagtttoga 420
 tggaaa atg aag gtt gca cgt ttt caa aaa ata cct aat ggt gaa aat 468
 Met Lys Val Ala Arg Phe Gln Lys Ile Pro Asn Gly Glu Asn
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 gag aca atg att cct gta ttg aca tca aaa aaa gca agt gaa tta cca 516
 Glu Thr Met Ile Pro Val Leu Thr Ser Lys Lys Ala Ser Glu Leu Pro
 15 20 25 30
 gtc agt gaa gtt gca agc att ctg caa gct gat ctt cag aat ggt cta 564
 Val Ser Glu Val Ala Ser Ile Leu Gln Ala Asp Leu Gln Asn Gly Leu
 35 40 45
 aac aaa tgt gaa gtt agt cat agg cga gcc ttt cat ggc tgg aat gag 612
 Asn Lys Cys Glu Val Ser His Arg Arg Ala Phe His Gly Trp Asn Glu
 50 55 60
 ttt gat att agt gaa gat gag cca ctg tgg aag aag tat att tct cag 660
 Phe Asp Ile Ser Glu Asp Glu Pro Leu Trp Lys Lys Tyr Ile Ser Gln
 65 70 75
 ttt aaa aat ccc ctt att atg ctg ctt ctg gct tct gca gtc atc agt 708
 Phe Lys Asn Pro Leu Ile Met Leu Leu Leu Ala Ser Ala Val Ile Ser
 80 85 90
 gtt tta atg cat cag ttt gat gat gcc gtc agt atc act gtg gca ata 756
 Val Leu Met His Gln Phe Asp Asp Ala Val Ser Ile Thr Val Ala Ile
 95 100 105 110
 ctt atc gtt gtt aca gtt gcc ttt gtt cag gaa tat cgt tca gaa aaa 804
 Leu Ile Val Val Thr Val Ala Phe Val Gln Glu Tyr Arg Ser Glu Lys
 115 120 125
 tct ctt gaa gaa ttg agt aaa ctt gtg cca cca gaa tgc cat tgt gtg 852
 Ser Leu Glu Glu Leu Ser Lys Leu Val Pro Pro Glu Cys His Cys Val
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 cgt gaa gga aaa ttg gag cat aca ctt gcc cga gac ttg gtt cca ggt 900
 Arg Glu Gly Lys Leu Glu His Thr Leu Ala Arg Asp Leu Val Pro Gly
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 gat aca gtt tgc ctt tct gtt ggg gat aga gtt cct gct gac tta cgc 948
 Asp Thr Val Cys Leu Ser Val Gly Asp Arg Val Pro Ala Asp Leu Arg
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 ttg ttt gag gct gtg gat ctt tcc att gat gag tcc agc ttg aca ggt 996

Leu Phe Glu Ala Val Asp Leu Ser Ile Asp Glu Ser Ser Leu Thr Gly
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gag aca acg cct tgt tct aag gtg aca gct cct cag cca gct gca act 1044
 Glu Thr Thr Pro Cys Ser Lys Val Thr Ala Pro Gln Pro Ala Ala Thr
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 Asn Gly Asp Leu Ala Ser Arg Ser Asn Ile Ala Phe Met Gly Thr Leu
 210 215 220

gtc aga tgt ggc aaa gca aag ggt gtt gtc att gga aca gga gaa aat 1140
 Val Arg Cys Gly Lys Ala Lys Gly Val Val Ile Gly Thr Gly Glu Asn
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tct gaa ttt ggg gag gtt ttt aaa atg atg caa gca gaa gag gca cca 1188
 Ser Glu Phe Gly Glu Val Phe Lys Met Met Gln Ala Glu Glu Ala Pro
 240 245 250

aaa acc cct ctg cag aag agc atg gac ctc tta gga aaa caa ctt tcc 1236
 Lys Thr Pro Leu Gln Lys Ser Met Asp Leu Leu Gly Lys Gln Leu Ser
 255 260 265 270

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 Phe Tyr Ser Phe Gly Ile Ile Gly Ile Ile Met Leu Val Gly Trp Leu
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 Val Ala Ala Ile Pro Glu Gly Leu Pro Ile Val Val Thr Val Thr Leu
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gct ctt ggt gtt atg aga atg gtg aag aaa agg gcc att gtg aaa aag 1428
 Ala Leu Gly Val Met Arg Met Val Lys Lys Arg Ala Ile Val Lys Lys
 320 325 330

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 Lys Thr Gly Thr Leu Thr Lys Asn Glu Met Thr Val Thr His Ile Phe
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 Thr Ser Asp Gly Leu His Ala Glu Val Thr Gly Val Gly Tyr Asn Gln
 370 375 380

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 Phe Gly Glu Val Ile Val Asp Gly Asp Val Val His Gly Phe Tyr Asn
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865 870 875

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Leu Phe Leu Leu Gly Leu Thr Ser Ser Val Cys Ile Val Ala Glu Ile
880 885 890

ata aag aag gtt gaa agg agc agg gaa aag atc cag aag cat gtt agt 3156
Ile Lys Lys Val Glu Arg Ser Arg Glu Lys Ile Gln Lys His Val Ser
895 900 905 910

tcg aca tca tca tct ttt ctt gaa gta tgatgcatat tgcattatatt 3203
Ser Thr Ser Ser Ser Phe Leu Glu Val
915

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35 40 45
Gly Leu Glu Ser Trp Ser Phe Phe Ala Val Tyr Asp Gly His Ala Gly
50 55 60
Ser Gln Val Ala Lys Tyr Cys Cys Glu His Leu Leu Asp His Ile Thr
65 70 75 80
Asn Asn Gln Asp Phe Lys Gly Ser Ala Gly Ala Pro Ser Val Glu Asn
85 90 95
Val Lys Asn Gly Ile Arg Thr Gly Phe Leu Glu Ile Asp Glu His Met
100 105 110

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Ile	Trp	Asp	Val	Met	Gly	Asn	Glu	Glu	Leu	Cys	Asp	Phe	Val	Arg	Ser
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Ser	Lys	Arg	Asn	Val	Ile	Glu	Ala	Val	Tyr	Asn	Arg	Leu	Asn	Pro	Tyr
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Arg	Lys	Val	His	Phe	Phe	Thr	Gln	Asp	His	Lys	Pro	Ser	Asn	Pro	Leu		
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Val	Asn	Gly	Ser	Leu	Ala	Val	Ser	Arg	Ala	Leu	Gly	Asp	Phe	Asp	Tyr		
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Lys	Cys	Val	His	Gly	Lys	Gly	Pro	Thr	Glu	Gln	Leu	Val	Ser	Pro	Glu		
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Pro	Glu	Val	His	Asp	Ile	Glu	Arg	Ser	Glu	Glu	Asp	Asp	Gln	Phe	Ile		
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atc	ctt	gca	tgt	gat	ggg	atc	tgg	gat	gtt	atg	gga	aat	gaa	gag	ctc	1193	
Ile	Leu	Ala	Cys	Asp	Gly	Ile	Trp	Asp	Val	Met	Gly	Asn	Glu	Glu	Leu		
235					240					245					250		
tgt	gat	ttt	gta	aga	tcc	aga	ctt	gaa	gtc	act	gat	gac	ctt	gag	aaa	1241	
Cys	Asp	Phe	Val	Arg	Ser	Arg	Leu	Glu	Val	Thr	Asp	Asp	Leu	Glu	Lys		
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Arg	Val	Glu	Glu	Ile	Ile	Lys	Lys	Gln	Gly	Glu	Gly	Val	Pro	Asp	Leu		
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gtc	cat	gtg	atg	cgc	aca	tta	gcg	agt	gag	aac	atc	ccc	agc	ctc	cca	1481	
Val	His	Val	Met	Arg	Thr	Leu	Ala	Ser	Glu	Asn	Ile	Pro	Ser	Leu	Pro		
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			350					355					360				
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Asn	Arg	Leu	Asn	Pro	Tyr	Lys	Asn	Asp	Asp	Thr	Asp	Ser	Thr	Ser	Thr		

365

370

375

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Asp Asp Met Trp
380

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Thr Leu Phe Val Asn Gly Gln Pro Arg Pro Leu Glu Ser Ser Gln Val
50 55 60
Lys Tyr Leu Arg Arg Glu Leu Ile Glu Leu Arg Asn Lys Val Asn Arg
65 70 75 80
Leu Leu Asp Ser Leu Glu Pro Pro Gly Glu Pro Gly Pro Ser Thr Asn

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Ala	Gln	Thr	Ser	Gln	Pro	Thr	Asn	Tyr	Thr	Val	Ala	Pro	Ala	Ser	Gln				
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Pro	Gly	Met	Ala	Pro	Ser	Gln	Pro	Gly	Ala	Tyr	Gln	Pro	Arg	Pro	Gly				
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Phe	Thr	Ser	Leu	Pro	Gly	Ser	Thr	Met	Thr	Pro	Pro	Pro	Ser	Gly	Pro				
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Asn	Pro	Tyr	Ala	Arg	Asn	Arg	Pro	Pro	Phe	Gly	Gln	Gly	Tyr	Thr	Gln				
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<213> Homo sapiens

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<400> 138

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Asp Glu Val Thr Ile Lys Tyr Lys Asp Glu Asp Gly Asp Leu Ile Thr
      15                    20                    25

att ttt gat agt tct gac ctt tcc ttt gca att cag tgc agt agg ata      145
Ile Phe Asp Ser Ser Asp Leu Ser Phe Ala Ile Gln Cys Ser Arg Ile
      30                    35                    40                    45

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Leu Lys Leu Thr Leu Phe Val Asn Gly Gln Pro Arg Pro Leu Glu Ser
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agt cag gtg aaa tat ctc cgt cga gaa ctg ata gaa ctt cga aat aaa      241
Ser Gln Val Lys Tyr Leu Arg Arg Glu Leu Ile Glu Leu Arg Asn Lys
            65                    70                    75

gtg aat cgt tta ttg gat agc ttg gaa cca cct gga gaa cca gga cct      289
Val Asn Arg Leu Leu Asp Ser Leu Glu Pro Pro Gly Glu Pro Gly Pro
            80                    85                    90

tcc acc aat att cct gaa aat gat act gtg gat ggt agg gaa gaa aag      337
Ser Thr Asn Ile Pro Glu Asn Asp Thr Val Asp Gly Arg Glu Glu Lys
            95                    100                    105

tct gct tct gat tct tct gga aaa cag tct act cag gtt atg gca gca      385
Ser Ala Ser Asp Ser Ser Gly Lys Gln Ser Thr Gln Val Met Ala Ala
      110                    115                    120                    125

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Ser Met Ser Ala Phe Asp Pro Leu Lys Asn Gln Asp Glu Ile Asn Lys
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aat gtt atg tca gcg ttt ggc tta aca gat gat cag gtt tca ggg cca      481
Asn Val Met Ser Ala Phe Gly Leu Thr Asp Asp Gln Val Ser Gly Pro
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ccc agt gct cct gca gaa gat cgt tca gga aca ccc gac agc att gct      529
Pro Ser Ala Pro Ala Glu Asp Arg Ser Gly Thr Pro Asp Ser Ile Ala
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tcc tcc tcc tca gca gct cac cca cca ggc gtt cag cca cag cag cca      577
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Pro Tyr Thr Gly Ala Gln Thr Gln Ala Gly Gln Met Tyr Gln Gln Tyr

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210		215	220	
cag cct caa cag tat ggt att cag tat tca gca agc tat agt cag cag				721
Gln Pro Gln Gln Tyr Gly Ile Gln Tyr Ser Ala Ser Tyr Ser Gln Gln				
225		230	235	
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Thr Gly Pro Gln Gln Pro Gln Gln Phe Gln Gly Tyr Gly Gln Gln Pro				
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Pro Ala Gln Pro Pro Gln Gln Tyr Gln Ala Ser Asn Tyr Pro Ala Gln				
270		275	280	285
act tac act gcc caa act tct cag cct act aat tat act gtg gct cct				913
Thr Tyr Thr Ala Gln Thr Ser Gln Pro Thr Asn Tyr Thr Val Ala Pro				
290		295	300	
gcc tct caa cct gga atg gct cca agc caa cct ggg gcc tat caa cca				961
Ala Ser Gln Pro Gly Met Ala Pro Ser Gln Pro Gly Ala Tyr Gln Pro				
305		310	315	
aga cca ggt ttt act tca ctt cct gga agt acc atg acc cct cct cca				1009
Arg Pro Gly Phe Thr Ser Leu Pro Gly Ser Thr Met Thr Pro Pro Pro				
320		325	330	
agt ggg cct aat cct tat gcg cgt aac cgt cct ccc ttt ggt cag ggc				1057
Ser Gly Pro Asn Pro Tyr Ala Arg Asn Arg Pro Pro Phe Gly Gln Gly				
335		340	345	
tat acc caa cct gga cct ggt tat cga taaggaggct cctctacacc				1104
Tyr Thr Gln Pro Gly Pro Gly Tyr Arg				
350		355		
aattaatgta gctgctagct attggcctcc caaaagactc cagtactatt ttaatttgta				1164
ttgaagaagt tcagaaattt aaaagcagag catttttttat gatatacttg ttggtgttaa				1224
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cttgactttc tagcttccct tgtccggagg atattaaaaat gctagggtga ggttttagcca				1404
tcttacttgg ctttttacta ttaacatgat gtactaaagt agagcccttt gagaatacaa				1464
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<210> 139
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 <212> PRT
 <213> Homo sapiens

<400> 139

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			20					25					30		
Tyr	Asp	Glu	Leu	Val	Leu	Met	Met	Gln	Arg	Val	Phe	Arg	Gly	Lys	Leu
	35						40					45			
Leu	Ser	Asn	Asp	Glu	Val	Thr	Ile	Lys	Tyr	Lys	Asp	Glu	Asp	Gly	Asp
	50						55				60				
Leu	Ile	Thr	Ile	Phe	Asp	Ser	Ser	Asp	Leu	Ser	Phe	Ala	Ile	Gln	Cys
	65				70					75					80
Ser	Arg	Ile	Leu	Lys	Leu	Thr	Leu	Phe	Val	Asn	Gly	Gln	Pro	Arg	Pro
				85					90					95	
Leu	Glu	Ser	Ser	Gln	Val	Lys	Tyr	Leu	Arg	Arg	Glu	Leu	Ile	Glu	Leu
			100					105					110		
Arg	Asn	Lys	Val	Asn	Arg	Leu	Leu	Asp	Ser	Leu	Glu	Pro	Pro	Gly	Glu
		115					120					125			
Pro	Gly	Pro	Ser	Thr	Asn	Ile	Pro	Glu	Asn	Asp	Thr	Val	Asp	Gly	Arg
	130					135					140				
Glu	Glu	Lys	Ser	Ala	Ser	Asp	Ser	Ser	Gly	Lys	Gln	Ser	Thr	Gln	Val
	145				150					155					160
Met	Ala	Ala	Ser	Met	Ser	Ala	Phe	Asp	Pro	Leu	Lys	Asn	Gln	Asp	Glu
				165					170					175	
Ile	Asn	Lys	Asn	Val	Met	Ser	Ala	Phe	Gly	Leu	Thr	Asp	Asp	Gln	Val
			180					185					190		
Ser	Gly	Pro	Pro	Ser	Ala	Pro	Ala	Glu	Asp	Arg	Ser	Gly	Thr	Pro	Asp
		195				200						205			
Ser	Ile	Ala	Ser	Ser	Ser	Ser	Ala	Ala	His	Pro	Pro	Gly	Val	Gln	Pro
	210					215					220				
Gln	Gln	Pro	Pro	Tyr	Thr	Gly	Ala	Gln	Thr	Gln	Ala	Gly	Gln	Met	Tyr
	225				230					235				240	
Gln	Gln	Tyr	Gln	Gln	Gln	Ala	Gly	Tyr	Gly	Ala	Gln	Gln	Pro	Gln	Ala
			245						250					255	
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<211> 1641
<212> DNA
<213> Homo sapiens
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		1					5				10					
atc	gtc	aaa	gct	caa	ctt	ggg	gag	gat	att	cgg	cga	att	cct	att	cat	99
Ile	Val	Lys	Ala	Gln	Leu	Gly	Glu	Asp	Ile	Arg	Arg	Ile	Pro	Ile	His	
			15					20					25			
aat	gaa	gat	att	act	tat	gat	gaa	tta	gtg	cta	atg	atg	caa	cga	gtt	147
Asn	Glu	Asp	Ile	Thr	Tyr	Asp	Glu	Leu	Val	Leu	Met	Met	Gln	Arg	Val	
		30					35					40				
ttc	aga	gga	aaa	ctt	ctg	agt	aat	gat	gaa	gta	aca	ata	aag	tat	aaa	195
Phe	Arg	Gly	Lys	Leu	Leu	Ser	Asn	Asp	Glu	Val	Thr	Ile	Lys	Tyr	Lys	
	45					50					55					
gat	gaa	gat	gga	gat	ctt	ata	aca	att	ttt	gat	agt	tct	gac	ctt	tcc	243
Asp	Glu	Asp	Gly	Asp	Leu	Ile	Thr	Ile	Phe	Asp	Ser	Ser	Asp	Leu	Ser	
60					65					70					75	
ttt	gca	att	cag	tgc	agt	agg	ata	ctg	aaa	ctg	aca	tta	ttt	gtt	aat	291
Phe	Ala	Ile	Gln	Cys	Ser	Arg	Ile	Leu	Lys	Leu	Thr	Leu	Phe	Val	Asn	

80										85										90										
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Gly	Gln	Pro	Arg	Pro	Leu	Glu	Ser	Ser	Gln	Val	Lys	Tyr	Leu	Arg	Arg															
			95				100						105																	
gaa	ctg	ata	gaa	ctt	cga	aat	aaa	gtg	aat	cgt	tta	ttg	gat	agc	ttg	387														
Glu	Leu	Ile	Glu	Leu	Arg	Asn	Lys	Val	Asn	Arg	Leu	Leu	Asp	Ser	Leu															
			110				115						120																	
gaa	cca	cct	gga	gaa	cca	gga	cct	tcc	acc	aat	att	cct	gaa	aat	gat	435														
Glu	Pro	Pro	Gly	Glu	Pro	Gly	Pro	Ser	Thr	Asn	Ile	Pro	Glu	Asn	Asp															
			125				130						135																	
act	gtg	gat	ggg	agg	gaa	gaa	aag	tct	gct	tct	gat	tct	tct	gga	aaa	483														
Thr	Val	Asp	Gly	Arg	Glu	Glu	Lys	Ser	Ala	Ser	Asp	Ser	Ser	Gly	Lys															
			140				145						155																	
cag	tct	act	cag	gtt	atg	gca	gca	agt	atg	tct	gct	ttt	gat	cct	tta	531														
Gln	Ser	Thr	Gln	Val	Met	Ala	Ala	Ser	Met	Ser	Ala	Phe	Asp	Pro	Leu															
			160						165						170															
aaa	aac	caa	gat	gaa	atc	aat	aaa	aat	gtt	atg	tca	gcg	ttt	ggc	tta	579														
Lys	Asn	Gln	Asp	Glu	Ile	Asn	Lys	Asn	Val	Met	Ser	Ala	Phe	Gly	Leu															
			175						180						185															
aca	gat	gat	cag	gtt	tca	ggg	cca	ccc	agt	gct	cct	gca	gaa	gat	cgt	627														
Thr	Asp	Asp	Gln	Val	Ser	Gly	Pro	Pro	Ser	Ala	Pro	Ala	Glu	Asp	Arg															
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Ser	Gly	Thr	Pro	Asp	Ser	Ile	Ala	Ser	Ser	Ser	Ser	Ala	Ala	His	Pro															
			205			210						215																		
cca	ggc	gtt	cag	cca	cag	cag	cca	cca	tat	aca	gga	gct	cag	act	caa	723														
Pro	Gly	Val	Gln	Pro	Gln	Gln	Pro	Pro	Tyr	Thr	Gly	Ala	Gln	Thr	Gln															
			220			225			230						235															
gca	ggt	cag	atg	tac	caa	cag	tac	cag	caa	cag	gcc	ggc	tat	ggg	gca	771														
Ala	Gly	Gln	Met	Tyr	Gln	Gln	Tyr	Gln	Gln	Gln	Ala	Gly	Tyr	Gly	Ala															
			240						245						250															
cag	cag	ccg	cag	gct	cca	cct	cag	cag	cct	caa	cag	tat	ggg	att	cag	819														
Gln	Gln	Pro	Gln	Ala	Pro	Pro	Gln	Gln	Pro	Gln	Gln	Tyr	Gly	Ile	Gln															
			255						260						265															
tat	tca	gca	agc	tat	agt	cag	cag	act	gga	ccc	caa	caa	cct	cag	cag	867														
Tyr	Ser	Ala	Ser	Tyr	Ser	Gln	Gln	Thr	Gly	Pro	Gln	Gln	Pro	Gln	Gln															
			270			275						280																		
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Phe	Gln	Gly	Tyr	Gly	Gln	Gln	Pro	Thr	Ser	Gln	Ala	Pro	Ala	Pro	Ala															
			285			290						295																		
ttt	tct	ggg	cag	cct	caa	caa	ctg	cct	gct	cag	ccg	cca	cag	cag	tac	963														
Phe	Ser	Gly	Gln	Pro	Gln	Gln	Leu	Pro	Ala	Gln	Pro	Pro	Gln	Gln	Tyr															
			300			305			310						315															

cag gcg agc aat tat cct gca caa act tac act gcc caa act tct cag 1011
Gln Ala Ser Asn Tyr Pro Ala Gln Thr Tyr Thr Ala Gln Thr Ser Gln
320 325 330

cct act aat tat act gtg gct cct gcc tct caa cct gga atg gct cca 1059
Pro Thr Asn Tyr Thr Val Ala Pro Ala Ser Gln Pro Gly Met Ala Pro
335 340 345

agc caa cct ggg gcc tat caa cca aga cca ggt ttt act tca ctt cct 1107
Ser Gln Pro Gly Ala Tyr Gln Pro Arg Pro Gly Phe Thr Ser Leu Pro
350 355 360

gga agt acc atg acc cct cct cca agt ggg cct aat cct tat gcg cgt 1155
Gly Ser Thr Met Thr Pro Pro Pro Ser Gly Pro Asn Pro Tyr Ala Arg
365 370 375

aac cgt cct ccc ttt ggt cag ggc tat acc caa cct gga cct ggt tat 1203
Asn Arg Pro Pro Phe Gly Gln Gly Tyr Thr Gln Pro Gly Pro Gly Tyr
380 385 390 395

cga taaggaggct cctctacacc aattaatgta gctgctagct attggcctcc 1256
Arg

caaaagactc cagtactatt ttaatttgta ttgaagaagt tcagaaattht aaaagcagag 1316

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ccaaaatgaa agttttttcc tccctgctta aaaatgtagc agcttcttag ttacttttga 1436

acactactct tacatgtata aagtgtattga cttgactttc tagcttccct tgtccggagg 1496

atattaaaat gctagggtga ggttttagcca tcttacttgg ctttttacta ttaacatgat 1556

gtactaaagt agagcccttt gagaatacaa gatattatgt ataaaatgta aactgatga 1616

taggttaata aagatgattg aatcc 1641

<210> 141

<211> 323

<212> PRT

<213> Homo sapiens

<400> 141

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Val Asn Gly Thr Val Leu Ser Ser Gly Thr Arg Phe Ala Val Asn
35 40 45

Phe Gln Thr Gly Phe Ser Gly Asn Asp Ile Ala Phe His Phe Asn Pro
50 55 60

Arg Phe Glu Asp Gly Gly Tyr Val Val Cys Asn Thr Arg Gln Asn Gly
 65 70 75 80
 Ser Trp Gly Pro Glu Glu Arg Lys Thr His Met Pro Phe Gln Lys Gly
 85 90 95
 Met Pro Phe Asp Leu Cys Phe Leu Val Gln Ser Ser Asp Phe Lys Val
 100 105 110
 Met Val Asn Gly Ile Leu Phe Val Gln Tyr Phe His Arg Val Pro Phe
 115 120 125
 His Arg Val Asp Thr Ile Ser Val Asn Gly Ser Val Gln Leu Ser Tyr
 130 135 140
 Ile Ser Phe Gln Pro Pro Gly Val Trp Pro Ala Asn Pro Ala Pro Ile
 145 150 155 160
 Thr Gln Thr Val Ile His Thr Val Gln Ser Ala Pro Gly Gln Met Phe
 165 170 175
 Ser Thr Pro Ala Ile Pro Pro Met Met Tyr Pro His Pro Ala Tyr Pro
 180 185 190
 Met Pro Phe Ile Thr Thr Ile Leu Gly Gly Leu Tyr Pro Ser Lys Ser
 195 200 205
 Ile Leu Leu Ser Gly Thr Val Leu Pro Ser Ala Gln Arg Phe His Ile
 210 215 220
 Asn Leu Cys Ser Gly Asn His Ile Ala Phe His Leu Asn Pro Arg Phe
 225 230 235 240
 Asp Glu Asn Ala Val Val Arg Asn Thr Gln Ile Asp Asn Ser Trp Gly
 245 250 255
 Ser Glu Glu Arg Ser Leu Pro Arg Lys Met Pro Phe Val Arg Gly Gln
 260 265 270
 Ser Phe Ser Val Trp Ile Leu Cys Glu Ala His Cys Leu Lys Val Ala
 275 280 285
 Val Asp Gly Gln His Leu Phe Glu Tyr Tyr His Arg Leu Arg Asn Leu
 290 295 300
 Pro Thr Ile Asn Arg Leu Glu Val Gly Gly Asp Ile Gln Leu Thr His
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 Val Gln Thr

<210> 142

<211> 1616

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (72)..(1040)

<400> 142

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Met Ala Phe Ser Gly Ser Gln Ala Pro Tyr Leu Ser Pro
1 5 10

gct gtc ccc ttt tct ggg act att caa gga ggt ctc cag gac gga ctt 158
Ala Val Pro Phe Ser Gly Thr Ile Gln Gly Gly Leu Gln Asp Gly Leu
15 20 25

cag atc act gtc aat ggg acc gtt ctc agc tcc agt gga acc agg ttt 206
Gln Ile Thr Val Asn Gly Thr Val Leu Ser Ser Ser Gly Thr Arg Phe
30 35 40 45

gct gtg aac ttt cag act ggc ttc agt gga aat gac att gcc ttc cac 254
Ala Val Asn Phe Gln Thr Gly Phe Ser Gly Asn Asp Ile Ala Phe His
50 55 60

ttc aac cct cgg ttt gaa gat gga ggg tac gtg gtg tgc aac acg agg 302
Phe Asn Pro Arg Phe Glu Asp Gly Gly Tyr Val Val Cys Asn Thr Arg
65 70 75

cag aac gga agc tgg ggg ccc gag gag agg aag aca cac atg cct ttc 350
Gln Asn Gly Ser Trp Gly Pro Glu Glu Arg Lys Thr His Met Pro Phe
80 85 90

cag aag ggg atg ccc ttt gac ctc tgc ttc ctg gtg cag agc tca gat 398
Gln Lys Gly Met Pro Phe Asp Leu Cys Phe Leu Val Gln Ser Ser Asp
95 100 105

ttc aag gtg atg gtg aac ggg atc ctc ttc gtg cag tac ttc cac cgc 446
Phe Lys Val Met Val Asn Gly Ile Leu Phe Val Gln Tyr Phe His Arg
110 115 120 125

gtg ccc ttc cac cgt gtg gac acc atc tcc gtc aat ggc tct gtg cag 494
Val Pro Phe His Arg Val Asp Thr Ile Ser Val Asn Gly Ser Val Gln
130 135 140

ctg tcc tac atc agc ttc cag cct ccc ggc gtg tgg cct gcc aac ccg 542
Leu Ser Tyr Ile Ser Phe Gln Pro Pro Gly Val Trp Pro Ala Asn Pro
145 150 155

gct ccc att acc cag aca gtc atc cac aca gtg cag agc gcc cct gga 590
Ala Pro Ile Thr Gln Thr Val Ile His Thr Val Gln Ser Ala Pro Gly
160 165 170

cag atg ttc tct act ccc gcc atc cca cct atg atg tac ccc cac ccc 638
Gln Met Phe Ser Thr Pro Ala Ile Pro Pro Met Met Tyr Pro His Pro
175 180 185

gcc tat ccg atg cct ttc atc acc acc att ctg gga ggg ctg tac cca 686
Ala Tyr Pro Met Pro Phe Ile Thr Thr Ile Leu Gly Gly Leu Tyr Pro

190	195	200	205	
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Ser Lys Ser Ile Leu Leu Ser Gly Thr Val Leu Pro Ser Ala Gln Arg	210	215	220	
ttc cac atc aac ctg tgc tct ggg aac cac atc gcc ttc cac ctg aac				782
Phe His Ile Asn Leu Cys Ser Gly Asn His Ile Ala Phe His Leu Asn	225	230	235	
ccc cgt ttt gat gag aat gct gtg gtc cgc aac acc cag atc gac aac				830
Pro Arg Phe Asp Glu Asn Ala Val Val Arg Asn Thr Gln Ile Asp Asn	240	245	250	
tcc tgg ggg tct gag gag cga agt ctg ccc cga aaa atg ccc ttc gtc				878
Ser Trp Gly Ser Glu Glu Arg Ser Leu Pro Arg Lys Met Pro Phe Val	255	260	265	
cgt ggc cag agc ttc tca gtg tgg atc ttg tgt gaa gct cac tgc ctc				926
Arg Gly Gln Ser Phe Ser Val Trp Ile Leu Cys Glu Ala His Cys Leu	270	275	280	285
aag gtg gcc gtg gat ggt cag cac ctg ttt gaa tac tac cat cgc ctg				974
Lys Val Ala Val Asp Gly Gln His Leu Phe Glu Tyr Tyr His Arg Leu	290	295	300	
agg aac ctg ccc acc atc aac aga ctg gaa gtg ggg ggc gac atc cag				1022
Arg Asn Leu Pro Thr Ile Asn Arg Leu Glu Val Gly Gly Asp Ile Gln	305	310	315	
ctg acc cat gtg cag aca taggcggcctt cctggccctg gggccggggg				1070
Leu Thr His Val Gln Thr	320			
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<210> 143				
<211> 136				

<212> PRT

<213> Homo sapiens

<400> 143

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Val Gly Gly Ile Leu Leu Val Phe Gln Ile Ile Ala Phe Leu Val Gly
      20             25             30

Gly Leu Ile Ala Pro Gly Pro Thr Thr Ala Val Ser Tyr Met Ser Val
      35             40             45

Lys Cys Val Asp Ala Arg Lys Asn His His Lys Thr Lys Trp Phe Val
      50             55             60

Pro Trp Gly Pro Asn His Cys Asp Lys Ile Arg Asp Ile Glu Glu Ala
      65             70             75             80

Ile Pro Arg Glu Ile Glu Ala Asn Asp Ile Val Phe Ser Val His Ile
      85             90             95

Pro Leu Pro His Met Ala Leu Ser Cys Gly Phe Leu Asp Gln Arg His
      100            105            110

Gly His Leu Ser Val Cys Leu Leu Thr Val Ala Phe Gly Gly Arg Phe
      115            120            125

Leu Gln Pro Leu Met His Cys Val
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<210> 144

<211> 1252

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (225)..(632)

<400> 144

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cccagaaagg aggcgaggaa ggagggagtg tgtgagagga gggagcaaaa agctcacct 180
aaaacattta tttcaaggag aaaagaaaaa gggggggcgc aaaa atg gct ggg gca 236
                                   Met Ala Gly Ala
                                   1

att ata gaa aac atg agc acc aag aag ctg tgc att gtt ggt ggg att 284
Ile Ile Glu Asn Met Ser Thr Lys Lys Leu Cys Ile Val Gly Gly Ile
  5             10             15             20

ctg ctc gtg ttc caa atc atc gcc ttt ctg gtg gga ggc ttg att gct 332

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Leu Leu Val Phe Gln Ile Ile Ala Phe Leu Val Gly Gly Leu Ile Ala
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 Pro Gly Pro Thr Thr Ala Val Ser Tyr Met Ser Val Lys Cys Val Asp
 40 45 50
 gcc cgt aag aac cat cac aag aca aaa tgg ttc gtg cct tgg gga ccc 428
 Ala Arg Lys Asn His His Lys Thr Lys Trp Phe Val Pro Trp Gly Pro
 55 60 65
 aat cat tgt gac aag atc cga gac att gaa gag gca att cca agg gaa 476
 Asn His Cys Asp Lys Ile Arg Asp Ile Glu Glu Ala Ile Pro Arg Glu
 70 75 80
 att gaa gcc aat gac atc gtg ttt tct gtt cac att ccc ctc ccc cac 524
 Ile Glu Ala Asn Asp Ile Val Phe Ser Val His Ile Pro Leu Pro His
 85 90 95 100
 atg gct ctt agc tgt ggt ttc ttg gac cag cgg cat gga cat ttg tca 572
 Met Ala Leu Ser Cys Gly Phe Leu Asp Gln Arg His Gly His Leu Ser
 105 110 115
 gtt tgc ctt ctg acg gta gct ttt gga gga aga ttc ctg cag cca cta 620
 Val Cys Leu Leu Thr Val Ala Phe Gly Gly Arg Phe Leu Gln Pro Leu
 120 125 130
 atg cat tgt gta tgataacaaa aactctggta tgacacattt tctgtgatca 672
 Met His Cys Val
 135
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 gtggcataat ataactgaat ttcatgagaa gattttattcc accaggggta tttcagcttt 1032
 gaaaccaaat ctgtgtatct aatactaacc aatctgttgg atgtggggtt taaaaaatgt 1092
 ttgctaaact acccaagtaa gatttactgt attaaatggc cttcgggtct gaaaagcttt 1152
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 <210> 145
 <211> 468
 <212> PRT
 <213> Homo sapiens

<400> 145

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Pro	Ile	Ile	Val	Thr	Arg	Ser	Glu	Thr	Leu	Lys	Arg	Gln	Phe	Gln	Phe
			20					25					30		
Met	Leu	Phe	Ile	Leu	Gln	Leu	Asp	Ile	Ala	Phe	Lys	Leu	Asn	Asn	Gln
		35					40					45			
Ile	Arg	Glu	Asn	Ala	Glu	Val	Ser	Met	Asp	Val	Ser	Leu	Ala	Tyr	Arg
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Asp	Asp	Ala	Phe	Ala	Glu	Trp	Thr	Glu	Met	Ala	His	Glu	Arg	Val	Pro
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Arg	Lys	Leu	Lys	Cys	Thr	Phe	Thr	Ser	Pro	Lys	Thr	Pro	Glu	His	Glu
				85					90					95	
Gly	Arg	Tyr	Tyr	Glu	Cys	Asp	Val	Leu	Pro	Phe	Met	Glu	Ile	Gly	Ser
			100					105					110		
Val	Ala	His	Lys	Phe	Tyr	Leu	Leu	Asn	Ile	Arg	Leu	Pro	Val	Asn	Glu
		115					120					125			
Lys	Lys	Lys	Ile	Asn	Val	Gly	Ile	Gly	Glu	Ile	Lys	Asp	Ile	Arg	Leu
	130					135					140				
Val	Gly	Ile	His	Gln	Asn	Gly	Gly	Phe	Thr	Lys	Val	Trp	Phe	Ala	Met
145					150					155					160
Lys	Thr	Phe	Leu	Thr	Pro	Ser	Ile	Phe	Ile	Ile	Met	Val	Trp	Tyr	Trp
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Arg	Arg	Ile	Thr	Met	Met	Ser	Arg	Pro	Pro	Val	Leu	Leu	Glu	Lys	Val
			180					185					190		
Ile	Phe	Ala	Leu	Gly	Ile	Ser	Met	Thr	Phe	Ile	Asn	Ile	Pro	Val	Glu
		195					200					205			
Trp	Phe	Ser	Ile	Gly	Phe	Asp	Trp	Thr	Trp	Met	Leu	Leu	Phe	Gly	Asp
	210					215					220				
Ile	Arg	Gln	Gly	Ile	Phe	Tyr	Ala	Met	Leu	Leu	Ser	Phe	Trp	Ile	Ile
225					230					235					240
Phe	Cys	Gly	Glu	His	Met	Met	Asp	Gln	His	Glu	Arg	Asn	His	Ile	Ala
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Gly	Tyr	Trp	Lys	Gln	Val	Gly	Pro	Ile	Ala	Val	Gly	Ser	Phe	Cys	Leu
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Phe	Ile	Phe	Asp	Met	Cys	Glu	Arg	Gly	Val	Gln	Leu	Thr	Asn	Pro	Phe
		275					280					285			
Tyr	Ser	Ile	Trp	Thr	Thr	Asp	Ile	Gly	Thr	Glu	Leu	Ala	Met	Ala	Phe
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Ile Ile Val Ala Gly Ile Cys Leu Cys Leu Tyr Phe Leu Phe Leu Cys
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Phe Met Val Phe Gln Val Phe Arg Asn Ile Ser Gly Lys Gln Ser Ser
 325 330 335

Leu Pro Ala Met Ser Lys Val Arg Arg Leu His Tyr Glu Gly Leu Ile
 340 345 350

Phe Arg Phe Lys Phe Leu Met Leu Ile Thr Leu Ala Cys Ala Ala Met
 355 360 365

Thr Val Ile Phe Phe Ile Val Ser Gln Val Thr Glu Gly His Trp Lys
 370 375 380

Trp Gly Gly Val Thr Val Gln Val Asn Ser Ala Phe Phe Thr Gly Ile
 385 390 395 400

Tyr Gly Met Trp Asn Leu Tyr Val Phe Ala Leu Met Phe Leu Tyr Ala
 405 410 415

Pro Ser His Lys Asn Tyr Gly Glu Asp Gln Ser Asn Gly Met Gln Leu
 420 425 430

Pro Cys Lys Ser Arg Glu Asp Cys Ala Leu Phe Val Ser Glu Leu Tyr
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Gln Glu Leu Phe Ser Ala Ser Lys Tyr Ser Phe Ile Asn Asp Asn Ala
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Ala Ser Gly Ile
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 <211> 1943
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (379)..(1782)

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 aaaacattta tttcaaggag aaaagaaaaa gggggggcgc aaaaatggct ggggcaatta 240
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 tcatcgccctt tctgggtgga ggcttgattg ctccagggcc cacaacggca gtgtcctaca 360

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Ser	Cys	Leu	Gly	Asp	Pro	Ile	Ile	Val	Thr	Arg	Ser	Glu	Thr	Leu	Lys	
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agg	caa	ttc	caa	ttc	atg	ctg	ttt	atc	ctg	cag	ctg	gac	att	gcc	ttc	507
Arg	Gln	Phe	Gln	Phe	Met	Leu	Phe	Ile	Leu	Gln	Leu	Asp	Ile	Ala	Phe	
		30					35					40				
aag	cta	aac	aac	caa	atc	aga	gaa	aat	gca	gaa	gtc	tcc	atg	gac	gtt	555
Lys	Leu	Asn	Asn	Gln	Ile	Arg	Glu	Asn	Ala	Glu	Val	Ser	Met	Asp	Val	
	45					50					55					
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Ser	Leu	Ala	Tyr	Arg	Asp	Asp	Ala	Phe	Ala	Glu	Trp	Thr	Glu	Met	Ala	
	60				65					70					75	
cat	gaa	aga	gta	cca	cgg	aaa	ctc	aaa	tgc	acc	ttc	aca	tct	ccc	aag	651
His	Glu	Arg	Val	Pro	Arg	Lys	Leu	Lys	Cys	Thr	Phe	Thr	Ser	Pro	Lys	
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act	cca	gag	cat	gag	ggc	cgt	tac	tat	gaa	tgt	gat	gtc	ctt	cct	ttc	699
Thr	Pro	Glu	His	Glu	Gly	Arg	Tyr	Tyr	Glu	Cys	Asp	Val	Leu	Pro	Phe	
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Met	Glu	Ile	Gly	Ser	Val	Ala	His	Lys	Phe	Tyr	Leu	Leu	Asn	Ile	Arg	
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Leu	Pro	Val	Asn	Glu	Lys	Lys	Lys	Ile	Asn	Val	Gly	Ile	Gly	Glu	Ile	
	125					130					135					
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Lys	Asp	Ile	Arg	Leu	Val	Gly	Ile	His	Gln	Asn	Gly	Gly	Phe	Thr	Lys	
	140				145					150					155	
gtg	tgg	ttt	gcc	atg	aag	acc	ttc	ctt	acg	ccc	agc	atc	ttc	atc	att	891
Val	Trp	Phe	Ala	Met	Lys	Thr	Phe	Leu	Thr	Pro	Ser	Ile	Phe	Ile	Ile	
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Met	Val	Trp	Tyr	Trp	Arg	Arg	Ile	Thr	Met	Met	Ser	Arg	Pro	Pro	Val	
			175					180					185			
ctt	ctg	gaa	aaa	gtc	atc	ttt	gcc	ctt	ggg	att	tcc	atg	acc	ttt	atc	987
Leu	Leu	Glu	Lys	Val	Ile	Phe	Ala	Leu	Gly	Ile	Ser	Met	Thr	Phe	Ile	
		190					195					200				
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Leu	Leu	Phe	Gly	Asp	Ile	Arg	Gln	Gly	Ile	Phe	Tyr	Ala	Met	Leu	Leu	
220					225				230						235	
tcc	ttc	tgg	atc	atc	ttc	tgt	ggc	gag	cac	atg	atg	gat	cag	cac	gag	1131
Ser	Phe	Trp	Ile	Ile	Phe	Cys	Gly	Glu	His	Met	Met	Asp	Gln	His	Glu	
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Arg	Asn	His	Ile	Ala	Gly	Tyr	Trp	Lys	Gln	Val	Gly	Pro	Ile	Ala	Val	
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Gly	Ser	Phe	Cys	Leu	Phe	Ile	Phe	Asp	Met	Cys	Glu	Arg	Gly	Val	Gln	
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Leu	Thr	Asn	Pro	Phe	Tyr	Ser	Ile	Trp	Thr	Thr	Asp	Ile	Gly	Thr	Glu	
	285					290					295					
ctg	gcc	atg	gcc	ttc	atc	atc	gtg	gct	gga	atc	tgc	ctc	tgc	ctc	tac	1323
Leu	Ala	Met	Ala	Phe	Ile	Ile	Val	Ala	Gly	Ile	Cys	Leu	Cys	Leu	Tyr	
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ttc	ctg	ttt	cta	tgc	ttc	atg	gta	ttt	cag	gtg	ttt	cgg	aac	atc	agt	1371
Phe	Leu	Phe	Leu	Cys	Phe	Met	Val	Phe	Gln	Val	Phe	Arg	Asn	Ile	Ser	
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ggg	aag	cag	tcc	agc	ctg	cca	gct	atg	agc	aaa	gtc	cgg	cgg	cta	cac	1419
Gly	Lys	Gln	Ser	Ser	Leu	Pro	Ala	Met	Ser	Lys	Val	Arg	Arg	Leu	His	
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tat	gag	ggg	cta	att	ttt	agg	ttc	aag	ttc	ctc	atg	ctt	atc	acc	ttg	1467
Tyr	Glu	Gly	Leu	Ile	Phe	Arg	Phe	Lys	Phe	Leu	Met	Leu	Ile	Thr	Leu	
		350					355					360				
gcc	tgc	gct	gcc	atg	act	gtc	atc	ttc	ttc	atc	gtt	agt	cag	gta	acg	1515
Ala	Cys	Ala	Ala	Met	Thr	Val	Ile	Phe	Phe	Ile	Val	Ser	Gln	Val	Thr	
	365					370					375					
gaa	ggc	cat	tgg	aaa	tgg	ggc	ggc	gtc	aca	gtc	caa	gtg	aac	agt	gcc	1563
Glu	Gly	His	Trp	Lys	Trp	Gly	Gly	Val	Thr	Val	Gln	Val	Asn	Ser	Ala	
380					385			390							395	
ttt	ttc	aca	ggc	atc	tat	ggg	atg	tgg	aat	ctg	tat	gtc	ttt	gct	ctg	1611
Phe	Phe	Thr	Gly	Ile	Tyr	Gly	Met	Trp	Asn	Leu	Tyr	Val	Phe	Ala	Leu	
			400					405						410		
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Met	Phe	Leu	Tyr	Ala	Pro	Ser	His	Lys	Asn	Tyr	Gly	Glu	Asp	Gln	Ser	
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Asn	Gly	Met	Gln	Leu	Pro	Cys	Lys	Ser	Arg	Glu	Asp	Cys	Ala	Leu	Phe	
		430					435					440				
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Val	Ser	Glu	Leu	Tyr	Gln	Glu	Leu	Phe	Ser	Ala	Ser	Lys	Tyr	Ser	Phe	

445 450 455
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 Ile Asn Asp Asn Ala Ala Ser Gly Ile
 460 465
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 aataaatatt ctttgagtat t 1943

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 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Met Asp Val Ser Leu Ala Tyr Arg Asp Asp Ala Phe Ala Glu Trp Thr
 50 55 60
 Glu Met Ala His Glu Arg Val Pro Arg Lys Leu Lys Cys Thr Phe Thr
 65 70 75 80
 Ser Pro Lys Thr Pro Glu His Glu Gly Arg Tyr Tyr Glu Cys Asp Val
 85 90 95
 Leu Pro Phe Met Glu Ile Gly Ser Val Ala His Lys Phe Tyr Leu Leu
 100 105 110
 Asn Ile Arg Leu Pro Val Asn Glu Lys Lys Lys Ile Asn Val Gly Ile
 115 120 125
 Gly Glu Ile Lys Asp Ile Arg Leu Val Gly Ile His Gln Asn Gly Gly
 130 135 140
 Phe Thr Lys Val Trp Phe Ala Met Lys Thr Phe Leu Thr Pro Ser Ile
 145 150 155 160
 Phe Ile Ile Met Val Trp Tyr Trp Arg Arg Ile Thr Met Met Ser Arg
 165 170 175
 Pro Pro Val Leu Leu Glu Lys Val Ile Phe Ala Leu Gly Ile Ser Met
 180 185 190
 Thr Phe Ile Asn Ile Pro Val Glu Trp Phe Ser Ile Gly Phe Asp Trp
 195 200 205

Thr Trp Met Leu Leu Phe Gly Asp Ile Arg Gln Gly Ile Phe Tyr Ala
 210 215 220

Met Leu Leu Ser Phe Trp Ile Ile Phe Cys Gly Glu His Met Met Asp
 225 230 235 240

Gln His Glu Arg Asn His Ile Ala Gly Tyr Trp Lys Gln Val Gly Pro
 245 250 255

Ile Ala Val Gly Ser Phe Cys Leu Phe Ile Phe Asp Met Cys Glu Arg
 260 265 270

Gly Val Gln Leu Thr Asn Pro Phe Tyr Ser Ile Trp Thr Thr Asp Ile
 275 280 285

Gly Thr Glu Leu Ala Met Ala Phe Ile Ile Val Ala Gly Ile Cys Leu
 290 295 300

Cys Leu Tyr Phe Leu Phe Leu Cys Phe Met Val Phe Gln Val Phe Arg
 305 310 315 320

Asn Ile Ser Gly Lys Gln Ser Ser Leu Pro Ala Met Ser Lys Val Arg
 325 330 335

Arg Leu His Tyr Glu Gly Leu Ile Phe Arg Phe Lys Phe Leu Met Leu
 340 345 350

Ile Thr Leu Ala Cys Ala Ala Met Thr Val Ile Phe Phe Ile Val Ser
 355 360 365

Gln Val Thr Glu Gly His Trp Lys Trp Gly Gly Ile Thr Val Gln Val
 370 375 380

Asn Ser Ala Phe Phe Thr Gly Ile Tyr Gly Met Trp Asn Leu Tyr Val
 385 390 395 400

Phe Ala Leu Met Phe Leu Tyr Ala Pro Ser His Lys Asn Tyr Gly Glu
 405 410 415

Asp Gln Ser Asn Gly Met Gln Leu Pro Cys Lys Ser Arg Glu Asp Cys
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Ala Leu Phe Val Ser Glu Leu Tyr Gln Glu Leu Phe Ser Ala Ser Lys
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Tyr Ser Phe Ile Asn Asp Asn Ala Ala Ser Gly Ile
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 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS

<222> (376)..(1755)

<400> 148

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tcgcctttct ggtgggaggc ttgattgctc cagggcccac aacggcagtg tcctacatgt 360
cggtgaaatg tgtgg atg ccc gta aga acc atc aca aga caa aat ggt tgc 411
          Met Pro Val Arg Thr Ile Thr Arg Gln Asn Gly Ser
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Cys Leu Gly Asp Pro Ile Ile Val Thr Arg Ser Glu Thr Leu Lys Arg
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caa ttc caa ggg aaa ttg aag cca atg aca tgc tgt ttt ctg ttc aca 507
Gln Phe Gln Gly Lys Leu Lys Pro Met Thr Ser Cys Phe Leu Phe Thr
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ttc ccc tcc ccc atg gac gtt tcc ctg gct tac cgt gat gac gcg ttt 555
Phe Pro Ser Pro Met Asp Val Ser Leu Ala Tyr Arg Asp Asp Ala Phe
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gct gag tgg act gaa atg gcc cat gaa aga gta cca cgg aaa ctg aaa 603
Ala Glu Trp Thr Glu Met Ala His Glu Arg Val Pro Arg Lys Leu Lys
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tgc acc ttc aca tct ccc aag act cca gag cat gag ggc cgt tac tat 651
Cys Thr Phe Thr Ser Pro Lys Thr Pro Glu His Glu Gly Arg Tyr Tyr
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gaa tgt gat gtc ctt cct ttc atg gaa att ggg tct gtg gcc cat aag 699
Glu Cys Asp Val Leu Pro Phe Met Glu Ile Gly Ser Val Ala His Lys
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Phe Tyr Leu Leu Asn Ile Arg Leu Pro Val Asn Glu Lys Lys Lys Ile
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aat gtg gga att ggg gag ata aag gat atc cgg ttg gtg ggg atc cac 795
Asn Val Gly Ile Gly Glu Ile Lys Asp Ile Arg Leu Val Gly Ile His
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caa aat gga ggc ttc acc aag gtg tgg ttt gcc atg aag acc ttc ctt 843
Gln Asn Gly Gly Phe Thr Lys Val Trp Phe Ala Met Lys Thr Phe Leu
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acg ccc agc atc ttc atc att atg gtg tgg tat tgg agg agg atc acc 891
Thr Pro Ser Ile Phe Ile Ile Met Val Trp Tyr Trp Arg Arg Ile Thr

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		175					180					185																		
ggg	att	tcc	atg	acc	ttt	atc	aat	atc	cca	gtg	gaa	tgg	ttt	tcc	atc	987														
Gly	Ile	Ser	Met	Thr	Phe	Ile	Asn	Ile	Pro	Val	Glu	Trp	Phe	Ser	Ile															
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cac	atg	atg	gat	cag	cac	gag	cgg	aac	cac	atc	gca	ggg	tat	tgg	aag	1131														
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Gln	Val	Gly	Pro	Ile	Ala	Val	Gly	Ser	Phe	Cys	Leu	Phe	Ile	Phe	Asp															
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Met	Cys	Glu	Arg	Gly	Val	Gln	Leu	Thr	Asn	Pro	Phe	Tyr	Ser	Ile	Trp															
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		335					340					345																		
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Phe	Leu	Met	Leu	Ile	Thr	Leu	Ala	Cys	Ala	Ala	Met	Thr	Val	Ile	Phe															
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Asn Leu Tyr Val Phe Ala Leu Met Phe Leu Tyr Ala Pro Ser His Lys
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aac tat gga gaa gac cag tcc aat gga atg caa ctc cca tgt aaa tcg 1659
Asn Tyr Gly Glu Asp Gln Ser Asn Gly Met Gln Leu Pro Cys Lys Ser
415 420 425

agg gaa gat tgt gct ttg ttt gtt tcg gaa ctt tat caa gaa ttg ttc 1707
Arg Glu Asp Cys Ala Leu Phe Val Ser Glu Leu Tyr Gln Glu Leu Phe
430 435 440

agc gct tcg aaa tat tcc ttc atc aat gac aac gca gct tct ggt att 1755
Ser Ala Ser Lys Tyr Ser Phe Ile Asn Asp Asn Ala Ala Ser Gly Ile
445 450 455 460

tgagtcaaca aggcaacaca tgtttatcag ctttgcattt gcagttgtca cagtcacatt 1815

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Glu Glu Glu Asn Glu Asp Ala Arg Ser Met Ala Ala Ala Ala Ala Ser
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Cys Pro Pro Tyr Arg Asn Ile Ser Gly His Ile Tyr Asn Gln Asn Val
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Pro Gly His Asp Val Glu Ala Tyr Cys Leu Leu Cys Glu Cys Arg Tyr
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 Met Val Leu Leu Ala Leu Gly Gln Asp Thr Glu Ala Arg Val Ser Leu
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 Pro Ala Ser Thr Arg Asp Met Ala Tyr Gln Val Ala Leu Arg Asp Phe
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Trp Pro Pro Ser Val Glu Thr Ser Val Ser Leu Gly Leu Pro His Glu	
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Phe	Asp	Cys	Ser	Leu	Ser	Leu	His	Gln	Ile	Asn	His	Ala	Leu	Met	Asn		
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Trp	Lys	Lys	Ala	Gln	Glu	Ala	Arg	Thr	Leu	Lys	Glu	Gln	Ser	Ile	Gln		
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Pro	Val	Phe	Pro	Tyr	Ser	Pro	Gln	Pro	Pro	Ser	Phe	Pro	Gln	Pro	Pro		
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Cys	Phe	Pro	Gln	Pro	Pro	Ser	Phe	Pro	Gln	Pro	Pro	Ser	Phe	Pro	Leu		
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cct	cca	gtc	tct	tcc	cca	cag	tcc	caa	tcc	ttt	cca	tca	gcc	tcc	tcc	2198	
Pro	Pro	Val	Ser	Ser	Pro	Gln	Ser	Gln	Ser	Phe	Pro	Ser	Ala	Ser	Ser		

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Gly Pro Leu Thr Asp Gln Gly Glu Pro Leu Leu Glu Thr Pro Glu			
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Glu Thr Thr Glu Gly Pro Glu Glu Pro Pro Asp Leu Ser Trp Thr Val			

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Glu Arg Gln Asn	Val Ala Ala Ile Ser Ala	Ala Tyr Thr Ala	Tyr Val			
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His Ser Tyr Arg	Ala Trp Gln Ala Glu Met	Asn Lys Leu Gly	Val Ala			
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Phe Gly Lys Asn	Leu Ser Leu Gly Thr Pro	Thr Pro Ser Trp	Pro Gly			
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Cys Pro Gln Pro	Ile Pro Ser His Pro Gln	Gly Gly Thr Pro	Val Phe			
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Ser Ser Pro Gln	Ser Gln Ser Phe Pro Ser	Ala Ser Ser Pro	Ala Pro			
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Gln Thr Pro Gly	Pro Gln Pro Leu Ile Ile	His His Ala Gln	Met Val			
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Gln Leu Gly Val	Asn Asn His Met Trp Gly	His Thr Gly Ala	Gln Ser			

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Gln Glu Ala Val Arg Thr Leu Ser Ser Arg Asp Asp His Arg Leu Gly
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Asp Gly Val Ser Asp Trp Ser Gln Gly Cys Ser Leu Arg Ser Thr Gly	
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Cys Gln Glu Pro Glu Glu Met Ser Trp Pro Pro Ser Gly Glu Ile Ala	
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Ser Val Lys Asp Gln Thr Pro Leu Gln Leu Ser Val Glu Asp Thr Thr	
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 Asp Asp His Arg Leu Gly Glu Leu Gln Asp Glu Ala Arg Asn Arg Cys
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 Gly Trp Asp Ile Ala Gly Asp Pro Gly Ser Ile Arg Thr Leu Gln Ser
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 Thr Glu Gly Ser Ala Gly Pro Gln Ser Leu Pro Leu Pro Ile Leu Glu
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Pro Thr Thr Pro Glu Thr Ser Pro Pro Pro Pro Pro Pro Pro Ser
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Tyr Leu Ser Tyr Gln Ala Gln Met Glu Gln Leu Gln Val Ala Phe Gly
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Ser His Met Ser Phe Gly Thr Gly Ala Pro Tyr Gly Ala Arg Met Pro
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Met Lys Lys Lys Ser
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Leu Gly Glu Val Leu Leu Pro Val Phe Glu Arg Lys Gly Ile Ala Leu
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ggc aaa gtg gac atc tac ctg gac cag tcc aac aca ccc ctg tcc ctc 391
Gly Lys Val Asp Ile Tyr Leu Asp Gln Ser Asn Thr Pro Leu Ser Leu
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Thr Phe Glu Ala Tyr Arg Phe Gly Gly His Tyr Leu Arg Val Lys Ala
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cca gcc aag cct gga gat gag ggc aag gtg gag cag ggc atg aag gac 487
Pro Ala Lys Pro Gly Asp Glu Gly Lys Val Glu Gln Gly Met Lys Asp
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tcc aag tcc ctg agt ttg ccg att ctg cgg cca gct ggg acc ggg ccc 535
Ser Lys Ser Leu Ser Leu Pro Ile Leu Arg Pro Ala Gly Thr Gly Pro

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Lys	His	Pro	Gln	Cys	Gln	Arg	Leu	Lys	Leu	Ser	Asp	Met	Leu	Ala	Lys	
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Pro	His	Gln	Arg	Leu	Thr	Lys	Tyr	Pro	Leu	Leu	Leu	Lys	Ser	Val	Leu	
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Tyr	Glu	Val	Val	Glu	Ser	Ser	Ser	Asp	Glu	Val	Asp	Lys	Leu	Leu	Lys	
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Gly	Lys	Asp	Ser	Lys	Met	Asp	Val	Tyr	Cys	Phe	Leu	Phe	Thr	Asp	Leu	
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 Leu Leu Asn Ser Thr Leu Thr Ala Ser Glu Val
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 gattcactcc tgccctgccc ccaccttccc agtcccacag gccaccctg gcttgggctg 3396
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Thr Pro Leu Ser Leu Thr Phe Glu Ala Tyr Arg Phe Gly Gly His Tyr
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Leu Arg Val Lys Ala Pro Ala Lys Pro Gly Asp Glu Gly Lys Val Glu
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Gln Gly Met Lys Asp Ser Lys Ser Leu Ser Leu Pro Ile Leu Arg Pro
65           70           75           80

Ala Gly Thr Gly Pro Pro Ala Leu Glu Arg Val Asp Ala Gln Ser Arg
          85           90           95

Arg Glu Ser Leu Asp Ile Leu Ala Pro Gly Arg Arg Arg Lys Asn Met
      100           105           110

Ser Glu Phe Leu Gly Glu Ala Ser Ile Pro Gly Gln Glu Pro Pro Thr
      115           120           125

Pro Ser Ser Cys Ser Leu Pro Ser Gly Ser Ser Gly Ser Thr Asn Thr
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Gly Asp Ser Trp Lys Asn Arg Ala Ala Ser Arg Phe Ser Gly Phe Phe
145           150           155           160

Ser Ser Gly Pro Ser Thr Ser Ala Phe Gly Arg Glu Val Asp Lys Met
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Glu Gln Leu Glu Gly Lys Leu His Thr Tyr Ser Leu Phe Gly Leu Pro
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Arg Leu Pro Arg Gly Leu Arg Phe Asp His Asp Ser Trp Glu Glu Glu
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Tyr Asp Glu Asp Glu Asp Glu Asp Asn Ala Cys Leu Arg Leu Glu Asp
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Ser Trp Arg Glu Leu Ile Asp Gly His Glu Lys Leu Thr Arg Arg Gln
225           230           235           240

Cys His Gln Gln Glu Ala Val Trp Glu Leu Leu His Thr Glu Ala Ser
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Tyr Ile Arg Lys Leu Arg Val Ile Ile Asn Leu Phe Leu Cys Cys Leu
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Leu Asn Leu Gln Glu Ser Gly Leu Leu Cys Glu Val Glu Ala Glu Arg
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Leu Phe Ser Asn Ile Pro Glu Ile Ala Gln Leu His Arg Arg Leu Trp
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 Ala Ser Val Met Ala Pro Val Leu Glu Lys Ala Arg Arg Thr Arg Ala
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 Leu Leu Gln Pro Gly Asp Phe Leu Lys Gly Phe Lys Met Phe Gly Ser
 325 330 335
 Leu Phe Lys Pro Tyr Ile Arg Tyr Cys Met Glu Glu Glu Gly Cys Met
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 Glu Tyr Met Arg Gly Leu Leu Arg Asp Asn Asp Leu Phe Arg Ala Tyr
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 Ile Thr Trp Ala Glu Lys His Pro Gln Cys Gln Arg Leu Lys Leu Ser
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 Asp Lys Leu Leu Lys Glu Phe Leu His Leu Asp Leu Thr Ala Pro Ile
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 Pro Gly Ala Ser Pro Glu Glu Thr Arg Gln Leu Leu Leu Glu Gly Ser
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Gln Gln Leu Arg Ala Gln Glu Pro Pro Gly Ser Gln Gln Pro Leu Gln
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Ser Leu Glu Glu Glu Glu Asp Glu Gln Glu Glu Glu Glu Glu Glu
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Gln Ser Asp Glu Thr Ser Leu Ser Thr Thr Ala Ser Ser Ala Thr Pro
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Met Asp Ser Ala Tyr Gly Thr Leu Ser Pro Thr Ser Leu Gln Asp Phe
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Val Ala Pro Gly Pro Met Ala Glu Leu Val Pro Arg Ala Pro Glu Ser
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Pro Val Gln Leu Leu Ser Cys Pro Pro His Leu Leu Lys Ser Lys Ser
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Glu Ala Ser Leu Leu Gln Leu Leu Ala Gly Ala Gly Thr His Gly Thr
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Trp Asp Cys Arg Gly Ala Pro Ser Pro Gly Ser Gly Pro Gly Leu Val
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Asp Leu Pro Ser Gly Ala Ser Pro Arg Val Gln Pro Glu Pro Pro Pro
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cgaggcctgt gacagcaagt tccacagcac c atg cat tat gat ggg cat gtc 172
Met His Tyr Asp Gly His Val
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Arg Phe Asp Leu Pro Pro Gln Gly Ser Val Leu Ala Arg Asn Val Ser
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Thr Arg Ser Cys Pro Pro Arg Thr Ser Pro Ala Val Asp Leu Glu Glu
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Gly Leu Lys Leu Ser Lys Lys Lys Ala Arg Arg Arg His Thr Asp Asp
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Pro Ser Lys Glu Cys Phe Thr Leu Lys Phe Asp Leu Asn Val Asp Ile
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Glu Thr Glu Ile Val Pro Ala Met Lys Lys Lys Ser Leu Gly Glu Val
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ctg ctg cct gta ttt gaa agg aag ggc att gcg ctg ggc aaa gtg gac 508
Leu Leu Pro Val Phe Glu Arg Lys Gly Ile Ala Leu Gly Lys Val Asp
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atc tac ctg gac cag tcc aac aca ccc ctg tcc ctc acc ttc gag gcc 556
Ile Tyr Leu Asp Gln Ser Asn Thr Pro Leu Ser Leu Thr Phe Glu Ala
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Tyr Arg Phe Gly Gly His Tyr Leu Arg Val Lys Ala Pro Ala Lys Pro

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Ser	Leu	Pro	Ile	Leu	Arg	Pro	Ala	Gly	Thr	Gly	Pro	Pro	Ala	Leu	Glu					
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Ala	Cys	Leu	Arg	Leu	Glu	Asp	Ser	Trp	Arg	Glu	Leu	Ile	Asp	Gly	His					
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Gln Leu His Arg Arg Leu Trp Ala Ser Val Met Ala Pro Val Leu Glu	
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Lys Ala Arg Arg Thr Arg Ala Leu Gln Pro Gly Asp Phe Leu Lys	
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Cys Gln Arg Leu Lys Leu Ser Asp Met Leu Ala Lys Pro His Gln Arg	
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Glu Ser Ser Ser Asp Glu Val Asp Lys Leu Leu Lys Glu Phe Leu His	
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Phe Gln Ala Ser Gly Gln Ala Leu Cys Arg Gly Trp Val Asp Thr Ile	
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Thr	Leu	Thr	Ala	Ser	Glu	Val											
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 Arg Arg Arg His Thr Asp Asp Pro Ser Lys Glu Cys Phe Thr Leu Lys
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 Phe Asp Leu Asn Val Asp Ile Glu Thr Glu Ile Val Pro Ala Met Lys
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 Lys Lys Ser Leu Gly Glu Val Leu Leu Pro Val Phe Glu Arg Lys Gly
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 Leu Ser Leu Thr Phe Glu Ala Tyr Arg Phe Gly Gly His Tyr Leu Arg
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 Val Lys Ala Pro Ala Lys Pro Gly Asp Glu Gly Lys Val Glu Gln Gly
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 Met Lys Asp Ser Lys Ser Leu Ser Leu Pro Ile Leu Arg Pro Ala Gly
 165 170 175
 Thr Gly Pro Pro Ala Leu Glu Arg Val Asp Ala Gln Ser Arg Arg Glu
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 Ser Leu Asp Ile Leu Ala Pro Gly Arg Arg Arg Lys Asn Met Ser Glu
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 Phe Leu Gly Glu Ala Ser Ile Pro Gly Gln Glu Pro Pro Thr Pro Ser
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 Ser Cys Ser Leu Pro Ser Gly Ser Ser Gly Ser Thr Asn Thr Gly Asp
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 Ser Trp Lys Asn Arg Ala Ala Ser Arg Phe Ser Gly Phe Phe Ser Ser

	245		250		255
Gly Pro Ser Thr Ser Ala Phe Gly Arg Glu Val Asp Lys Met Glu Gln	260	265	270		
Leu Glu Gly Lys Leu His Thr Tyr Ser Leu Phe Gly Leu Pro Arg Leu	275	280	285		
Pro Arg Gly Leu Arg Phe Asp His Asp Ser Trp Glu Glu Glu Tyr Asp	290	295	300		
Glu Asp Glu Asp Glu Asp Asn Ala Cys Leu Arg Leu Glu Asp Ser Trp	305	310	315	320	
Arg Glu Leu Ile Asp Gly His Glu Lys Leu Thr Arg Arg Gln Cys His	325	330	335		
Gln Gln Glu Ala Val Trp Glu Leu Leu His Thr Glu Ala Ser Tyr Ile	340	345	350		
Arg Lys Leu Arg Val Ile Ile Asn Leu Phe Leu Cys Cys Leu Leu Asn	355	360	365		
Leu Gln Glu Ser Gly Leu Leu Cys Glu Val Glu Ala Glu Arg Leu Phe	370	375	380		
Ser Asn Ile Pro Glu Ile Ala Gln Leu His Arg Arg Leu Trp Ala Ser	385	390	395	400	
Val Met Ala Pro Val Leu Glu Lys Ala Arg Arg Thr Arg Ala Leu Leu	405	410	415		
Gln Pro Gly Asp Phe Leu Lys Gly Phe Lys Met Phe Gly Ser Leu Phe	420	425	430		
Lys Pro Tyr Ile Arg Tyr Cys Met Glu Glu Glu Gly Cys Met Glu Tyr	435	440	445		
Met Arg Gly Leu Leu Arg Asp Asn Asp Leu Phe Arg Ala Tyr Ile Thr	450	455	460		
Trp Ala Glu Lys His Pro Gln Cys Gln Arg Leu Lys Leu Ser Asp Met	465	470	475	480	
Leu Ala Lys Pro His Gln Arg Leu Thr Lys Tyr Pro Leu Leu Leu Lys	485	490	495		
Ser Val Leu Arg Lys Thr Glu Glu Pro Arg Ala Lys Glu Ala Val Val	500	505	510		
Ala Met Ile Gly Ser Val Glu Arg Phe Ile His His Val Asn Ala Cys	515	520	525		
Met Arg Gln Arg Gln Glu Arg Gln Arg Leu Ala Ala Val Val Ser Arg	530	535	540		
Ile Asp Ala Tyr Glu Val Val Glu Ser Ser Ser Asp Glu Val Asp Lys					

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Leu Leu Lys Glu Phe	Leu His Leu Asp	Leu Thr Ala Pro	Ile Pro Gly			
	565	570	575			
Ala Ser Pro Glu Glu Thr Arg Gln	Leu Leu Glu Gly	Ser Leu Arg				
	580	585	590			
Met Lys Glu Gly Lys Asp Ser	Lys Met Asp Val Tyr Cys	Phe Leu Phe				
	595	600	605			
Thr Asp Leu Leu Leu Val Thr	Lys Ala Val Lys Lys Ala	Glu Arg Thr				
	610	615	620			
Arg Val Ile Arg Pro Pro	Leu Leu Val Asp Lys	Ile Val Cys Arg	Glu			
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Leu Arg Asp Pro Gly Ser Phe	Leu Leu Ile Tyr Leu Asn	Glu Phe His				
	645	650	655			
Ser Ala Val Gly Ala Tyr Thr	Phe Gln Ala Ser Gly Gln	Ala Leu Cys				
	660	665	670			
Arg Gly Trp Val Asp Thr Ile	Tyr Asn Ala Gln Asn	Gln Leu Gln Gln				
	675	680	685			
Leu Arg Ala Gln Glu Pro Pro	Gly Ser Gln Gln Pro	Leu Gln Ser Leu				
	690	695	700			
Glu Glu Glu Glu Asp Glu Gln	Glu Glu Glu Glu Glu Glu	Glu Glu Glu Glu				
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Glu Glu Glu Gly Glu Asp Ser	Gly Thr Ser Ala Ala Ser	Ser Ser Pro Thr				
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Ile Met Arg Lys Ser Ser Gly	Ser Pro Asp Ser Gln His	Cys Ala Ser				
	740	745	750			
Asp Gly Ser Thr Glu Thr Leu	Ala Met Val Val Val	Glu Pro Gly Asp				
	755	760	765			
Thr Leu Ser Ser Pro Glu Phe	Asp Ser Gly Pro Phe	Ser Ser Gln Ser				
	770	775	780			
Asp Glu Thr Ser Leu Ser Thr	Thr Ala Ser Ser Ala Thr	Pro Thr Ser				
	785	790	795			800
Glu Leu Leu Pro Leu Gly Pro	Val Asp Gly Arg Ser Cys	Ser Met Asp				
	805	810	815			
Ser Ala Tyr Gly Thr Leu Ser	Pro Thr Ser Leu Gln Asp	Phe Val Ala				
	820	825	830			
Pro Gly Pro Met Ala Glu Leu	Val Pro Arg Ala Pro	Glu Ser Pro Arg				
	835	840	845			
Val Pro Ser Pro Pro Pro Ser	Pro Arg Leu Arg Arg	Thr Pro Val				

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Gln 865	Leu	Leu	Ser	Cys	Pro 870	Pro	His	Leu	Leu	Lys 875	Ser	Lys	Ser	Glu	Ala 880
Ser	Leu	Leu	Gln	Leu 885	Leu	Ala	Gly	Ala	Gly 890	Thr	His	Gly	Thr	Pro 895	Ser
Ala	Pro	Ser	Arg 900	Ser	Leu	Ser	Glu	Leu	Cys 905	Leu	Ala	Val	Pro 910	Ala	Pro
Gly	Ile	Arg 915	Thr	Gln	Gly	Ser	Pro 920	Gln	Glu	Ala	Gly	Pro 925	Ser	Trp	Asp
Cys	Arg 930	Gly	Ala	Pro	Ser	Pro 935	Gly	Ser	Gly	Pro	Gly 940	Leu	Val	Gly	Cys
Leu 945	Ala	Gly	Glu	Pro	Ala 950	Gly	Ser	His	Arg	Lys 955	Arg	Cys	Gly	Asp	Leu 960
Pro	Ser	Gly	Ala	Ser 965	Pro	Arg	Val	Gln	Pro 970	Glu	Pro	Pro	Pro	Gly 975	Val
Ser	Ala	Gln	His 980	Arg	Lys	Leu	Thr	Leu 985	Ala	Gln	Leu	Tyr	Arg 990	Ile	Arg
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                               Met Gly Trp Lys Pro Ser Glu
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gct aga ggc cag tcc caa agt ctc cag gca tca ggg ctg cag ccc agg 161
Ala Arg Gly Gln Ser Gln Ser Leu Gln Ala Ser Gly Leu Gln Pro Arg
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agc ctc aag gcg gcc cgg cgg gcg act gga cgg ccg gac agg tcc cga 209
Ser Leu Lys Ala Ala Arg Arg Ala Thr Gly Arg Pro Asp Arg Ser Arg
          25                      30                      35

gca gcc ccg ccc aac atg gac cca gac ccc cag gcg ggc gtg cag gtg 257
Ala Ala Pro Pro Asn Met Asp Pro Asp Pro Gln Ala Gly Val Gln Val

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Gly Met Arg Val Val Arg Gly Val Asp Trp Lys Trp Gly Gln Gln Asp	60	65	70	
ggc ggc gag ggc ggc gtg ggc acg gtg gtg gag ctt ggc cgc cac ggc				353
Gly Gly Glu Gly Gly Val Gly Thr Val Val Glu Leu Gly Arg His Gly	75	80	85	
agc ccc tcg aca ccc gac cgc aca gtg gtc gtg cag tgg gac cag ggc				401
Ser Pro Ser Thr Pro Asp Arg Thr Val Val Val Gln Trp Asp Gln Gly	90	95	100	
acg cgc acc aac tac cgc gcc ggc tac cag ggc gcg cac gac ctg ctg				449
Thr Arg Thr Asn Tyr Arg Ala Gly Tyr Gln Gly Ala His Asp Leu Leu	105	110	115	
ctg tac gac aac gcc cag atc ggc gtc cgg cac ccc aac atc atc tgt				497
Leu Tyr Asp Asn Ala Gln Ile Gly Val Arg His Pro Asn Ile Ile Cys	120	125	130	135
gac tgc tgc aag aag cac ggg ctg cgg ggg atg cgc tgg aag tgc cgt				545
Asp Cys Cys Lys Lys His Gly Leu Arg Gly Met Arg Trp Lys Cys Arg	140	145	150	
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Val Cys Leu Asp Tyr Asp Leu Cys Thr Gln Cys Tyr Met His Asn Lys	155	160	165	
cat gag ctc gcc cac gcc ttc gac cgc tac gag acc gct cac tcg cgc				641
His Glu Leu Ala His Ala Phe Asp Arg Tyr Glu Thr Ala His Ser Arg	170	175	180	
cct gtc aca ctg agt ccc cgc cag ggc ctc ccg agg atc cca cta agg				689
Pro Val Thr Leu Ser Pro Arg Gln Gly Leu Pro Arg Ile Pro Leu Arg	185	190	195	
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Gly Ile Phe Gln Gly Ala Lys Val Val Arg Gly Pro Phe Trp Glu Trp	200	205	210	215
ggc tca cag gat gga ggg gaa ggg aaa ccg ggc cgt gtg gtg gac atc				785
Gly Ser Gln Asp Gly Gly Glu Gly Lys Pro Gly Arg Val Val Asp Ile	220	225	230	
cgt ggc tgg gat gtg gag aca ggc cgg agt gtg gcc agc gtg acg tgg				833
Arg Gly Trp Asp Val Glu Thr Gly Arg Ser Val Ala Ser Val Thr Trp	235	240	245	
gct gat ggt acc acc aat gtg tac cgt gtg ggc cac aag ggc aag gtg				881
Ala Asp Gly Thr Thr Asn Val Tyr Arg Val Gly His Lys Gly Lys Val	250	255	260	
gac ctc aag tgt gtg ggc gag gca gcg ggc ggc ttc tac tac aag gac				929
Asp Leu Lys Cys Val Gly Glu Ala Ala Gly Gly Phe Tyr Tyr Lys Asp	265	270	275	

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His Leu Pro Arg Leu Gly Lys Pro Ala Glu Leu Gln Arg Arg Val Ser	
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gct gac agc cag ccc ttc cag cac ggg gac aag gtc aag tgt ctg ctg	1025
Ala Asp Ser Gln Pro Phe Gln His Gly Asp Lys Val Lys Cys Leu Leu	
300 305 310	
gac act gat gtc ctg cgg gag atg cag gaa ggc cac ggc ggc tgg aac	1073
Asp Thr Asp Val Leu Arg Glu Met Gln Glu Gly His Gly Gly Trp Asn	
315 320 325	
ccc agg atg gcg gag ttt atc gga cag acg ggc acc gtg cat cgt atc	1121
Pro Arg Met Ala Glu Phe Ile Gly Gln Thr Gly Thr Val His Arg Ile	
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Thr Asp Arg Gly Asp Val Arg Val Gln Phe Asn His Glu Thr Arg Trp	
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Thr Phe His Pro Gly Ala Leu Thr Lys His His Ser Phe Trp Val Gly	
360 365 370 375	
gac gtg gtc cgg gtc atc ggc gac ctt gac aca gtg aag cgg ctg cag	1265
Asp Val Val Arg Val Ile Gly Asp Leu Asp Thr Val Lys Arg Leu Gln	
380 385 390	
gct ggg cat ggc gag tgg acg gac gac atg gcc cct gcc ctg ggc cgc	1313
Ala Gly His Gly Glu Trp Thr Asp Asp Met Ala Pro Ala Leu Gly Arg	
395 400 405	
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Val Gly Lys Val Val Lys Val Phe Gly Asp Gly Asn Leu Arg Val Ala	
410 415 420	
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Val Ala Gly Gln Arg Trp Thr Phe Ser Pro Ser Cys Leu Val Ala Tyr	
425 430 435	
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Arg Pro Glu Glu Asp Ala Asn Leu Asp Val Ala Glu Arg Ala Arg Glu	
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Asn Lys Ser Ser Leu Ser Val Ala Leu Asp Lys Leu Arg Ala Gln Lys	
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Ser Asp Pro Glu His Pro Gly Arg Leu Val Val Glu Val Ala Leu Gly	
475 480 485	
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Asn Ala Ala Arg Ala Leu Asp Leu Leu Arg Arg Arg Pro Glu Gln Val	
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Asp Thr Lys Asn Gln Gly Arg Thr Ala Leu Gln Val Ala Ala Tyr Leu	
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Gly Gln Val Glu Leu Ile Arg Leu Leu Leu Gln Ala Arg Ala Gly Val	
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Asp Leu Pro Asp Asp Glu Gly Asn Thr Ala Leu His Tyr Ala Ala Leu	
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Gly Asn Gln Pro Glu Ala Thr Arg Val Leu Leu Ser Ala Gly Cys Arg	
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Ala Asp Ala Ile Asn Ser Thr Gln Ser Thr Ala Leu His Val Ala Val	
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Gln Arg Gly Phe Leu Glu Val Val Arg Ala Leu Cys Glu Arg Gly Cys	
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Asp Val Asn Leu Pro Asp Ala His Ser Asp Thr Pro Leu His Ser Ala	
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atc tcg gcg ggc act gga gcc agc ggc att gtc gag gtc ctc acg gag	1985
Ile Ser Ala Gly Thr Gly Ala Ser Gly Ile Val Glu Val Leu Thr Glu	
620 625 630	
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Val Pro Asn Ile Asp Val Thr Ala Thr Asn Ser Gln Gly Phe Thr Leu	
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Leu His His Ala Ser Leu Lys Gly His Ala Leu Ala Val Arg Lys Ile	
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Leu Ala Arg Ala Arg Gln Leu Val Asp Ala Lys Lys Glu Asp Gly Phe	
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Thr Ala Leu His Leu Ala Ala Leu Asn Asn His Arg Glu Val Ala Gln	
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ctg cag tcc ccg ctg cat ctc gcc gtg caa cag gcc cac gtg ggg ctg	2273
Leu Gln Ser Pro Leu His Leu Ala Val Gln Gln Ala His Val Gly Leu	
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Glu	Gly	Asp	Thr	Ala	Leu	His	Val	Ala	Leu	Gln	Arg	His	Gln	Leu	Leu		
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ccc	ctg	gtg	gct	gat	ggg	gcc	ggg	ggg	gac	cca	ggg	ccc	ttg	cag	ctg	2417	
Pro	Leu	Val	Ala	Asp	Gly	Ala	Gly	Gly	Asp	Pro	Gly	Pro	Leu	Gln	Leu		
760					765				770						775		
ctg	tcc	agg	cta	cag	gcc	tcg	ggc	ctc	ccc	ggc	agc	gcg	gag	ctg	acg	2465	
Leu	Ser	Arg	Leu	Gln	Ala	Ser	Gly	Leu	Pro	Gly	Ser	Ala	Glu	Leu	Thr		
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Val	Gly	Ala	Ala	Val	Ala	Cys	Phe	Leu	Ala	Leu	Glu	Gly	Ala	Asp	Val		
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Thr	Pro	Asn	Thr	Val	Thr	Asn	Leu	His	Val	Gly	Ala	Ala	Pro	Gly	Pro		
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Glu	Ala	Ala	Glu	Cys	Leu	Val	Cys	Ser	Glu	Leu	Ala	Leu	Leu	Val	Leu		
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Phe	Ser	Pro	Cys	Gln	His	Arg	Thr	Val	Cys	Glu	Glu	Cys	Ala	Arg	Arg		
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cgc	atc	acc	tgc	ccc	atc	tgc	atc	gac	agg	cac	atc	cgc	ctc	gtg	ttc	2993	
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 Pro Gln Ala Gly Val Gln Val Gly Met Arg Val Val Arg Gly Val Asp
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 Trp Lys Trp Gly Gln Gln Asp Gly Gly Glu Gly Gly Val Gly Thr Val
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 Val Glu Leu Gly Arg His Gly Ser Pro Ser Thr Pro Asp Arg Thr Val
 85 90 95
 Val Val Gln Trp Asp Gln Gly Thr Arg Thr Asn Tyr Arg Ala Gly Tyr
 100 105 110
 Gln Gly Ala His Asp Leu Leu Leu Tyr Asp Asn Ala Gln Ile Gly Val
 115 120 125
 Arg His Pro Asn Ile Ile Cys Asp Cys Cys Lys Lys His Gly Leu Arg
 130 135 140
 Gly Met Arg Trp Lys Cys Arg Val Cys Leu Asp Tyr Asp Leu Cys Thr
 145 150 155 160
 Gln Cys Tyr Met His Asn Lys His Glu Leu Ala His Ala Phe Asp Arg
 165 170 175
 Tyr Glu Thr Ala His Ser Arg Pro Val Thr Leu Ser Pro Arg Gln Gly
 180 185 190

Leu Pro Arg Ile Pro Leu Arg Gly Ile Phe Gln Gly Ala Lys Val Val
 195 200 205
 Arg Gly Pro Phe Trp Glu Trp Gly Ser Gln Asp Gly Gly Glu Gly Lys
 210 215 220
 Pro Gly Arg Val Val Asp Ile Arg Gly Trp Asp Val Glu Thr Gly Arg
 225 230 235 240
 Ser Val Ala Ser Val Thr Trp Ala Asp Gly Thr Thr Asn Val Tyr Arg
 245 250 255
 Val Gly His Lys Gly Lys Val Asp Leu Lys Cys Val Gly Glu Ala Ala
 260 265 270
 Gly Gly Phe Tyr Tyr Lys Asp His Leu Pro Arg Leu Gly Lys Pro Ala
 275 280 285
 Glu Leu Gln Arg Arg Val Ser Ala Asp Ser Gln Pro Phe Gln His Gly
 290 295 300
 Asp Lys Val Lys Cys Leu Leu Asp Thr Asp Val Leu Arg Glu Met Gln
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 Glu Gly His Gly Gly Trp Asn Pro Arg Met Ala Glu Phe Ile Gly Gln
 325 330 335
 Thr Gly Thr Val His Arg Ile Thr Asp Arg Gly Asp Val Arg Val Gln
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 Phe Asn His Glu Thr Arg Trp Thr Phe His Pro Gly Ala Leu Thr Lys
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 His His Ser Phe Trp Val Gly Asp Val Val Arg Val Ile Gly Asp Leu
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 Asp Thr Val Lys Arg Leu Gln Ala Gly His Gly Glu Trp Thr Asp Asp
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 Asp Gly Asn Leu Arg Val Ala Val Ala Gly Gln Arg Trp Thr Phe Ser
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 Pro Ser Cys Leu Val Ala Tyr Arg Pro Glu Glu Asp Ala Asn Leu Asp
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 Val Ala Glu Arg Ala Arg Glu Asn Lys Ser Ser Leu Ser Val Ala Leu
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 Asp Lys Leu Arg Ala Gln Lys Ser Asp Pro Glu His Pro Gly Arg Leu
 465 470 475 480
 Val Val Glu Val Ala Leu Gly Asn Ala Ala Arg Ala Leu Asp Leu Leu
 485 490 495

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Leu	Gln	Val 515	Ala	Ala	Tyr	Leu	Gly 520	Gln	Val	Glu	Leu	Ile 525	Arg	Leu	Leu
Leu	Gln	Ala	Arg	Ala	Gly	Val 535	Asp	Leu	Pro	Asp	Asp 540	Glu	Gly	Asn	Thr
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Thr	Ala	Leu	His 580	Val	Ala	Val	Gln	Arg 585	Gly	Phe	Leu	Glu	Val 590	Val	Arg
Ala	Leu	Cys 595	Glu	Arg	Gly	Cys	Asp 600	Val	Asn	Leu	Pro	Asp 605	Ala	His	Ser
Asp	Thr 610	Pro	Leu	His	Ser	Ala 615	Ile	Ser	Ala	Gly	Thr 620	Gly	Ala	Ser	Gly
Ile 625	Val	Glu	Val	Leu	Thr 630	Glu	Val	Pro	Asn	Ile 635	Asp	Val	Thr	Ala	Thr 640
Asn	Ser	Gln	Gly	Phe 645	Thr	Leu	Leu	His	His 650	Ala	Ser	Leu	Lys	Gly 655	His
Ala	Leu	Ala	Val 660	Arg	Lys	Ile	Leu	Ala 665	Arg	Ala	Arg	Gln	Leu 670	Val	Asp
Ala	Lys	Lys 675	Glu	Asp	Gly	Phe	Thr 680	Ala	Leu	His	Leu	Ala 685	Ala	Leu	Asn
Asn	His 690	Arg	Glu	Val	Ala	Gln 695	Ile	Leu	Ile	Arg	Glu 700	Gly	Arg	Cys	Asp
Val 705	Asn	Val	Arg	Asn	Arg 710	Lys	Leu	Gln	Ser	Pro 715	Leu	His	Leu	Ala	Val 720
Gln	Gln	Ala	His	Val 725	Gly	Leu	Val	Pro	Leu 730	Leu	Val	Asp	Ala	Gly 735	Cys
Ser	Val	Asn	Ala 740	Glu	Asp	Glu	Glu	Gly 745	Asp	Thr	Ala	Leu	His 750	Val	Ala
Leu	Gln	Arg 755	His	Gln	Leu	Leu	Pro 760	Leu	Val	Ala	Asp	Gly 765	Ala	Gly	Gly
Asp	Pro 770	Gly	Pro	Leu	Gln	Leu 775	Leu	Ser	Arg	Leu	Gln 780	Ala	Ser	Gly	Leu
Pro 785	Gly	Ser	Ala	Glu	Leu 790	Thr	Val	Gly	Ala	Ala 795	Val	Ala	Cys	Phe	Leu 800

Ala Leu Glu Gly Ala Asp Val Ser Tyr Thr Asn His Arg Gly Arg Ser
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Pro Leu Asp Leu Ala Ala Glu Gly Arg Val Leu Lys Ala Leu Gln Gly
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Cys Ala Gln Arg Phe Arg Glu Arg Gln Ala Gly Gly Gly Ala Ala Pro
835 840 845

Gly Pro Arg Gln Thr Leu Gly Thr Pro Asn Thr Val Thr Asn Leu His
850 855 860

Val Gly Ala Ala Pro Gly Pro Glu Ala Ala Glu Cys Leu Val Cys Ser
865 870 875 880

Glu Leu Ala Leu Leu Val Leu Phe Ser Pro Cys Gln His Arg Thr Val
885 890 895

Cys Glu Glu Cys Ala Arg Arg Met Lys Lys Cys Ile Arg Cys Gln Val
900 905 910

Val Val Ser Lys Lys Leu Arg Pro Asp Gly Ser Glu Val Ala Ser Ala
915 920 925

Ala Pro Ala Pro Gly Pro Pro Arg Gln Leu Val Glu Glu Leu Gln Ser
930 935 940

Arg Tyr Arg Gln Met Glu Glu Arg Ile Thr Cys Pro Ile Cys Ile Asp
945 950 955 960

Arg His Ile Arg Leu Val Phe Gln Cys Gly His Gly Ala Cys Ala Pro
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Met Gly Trp Lys Pro Ser Glu
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Ala Arg Gly Gln Ser Gln Ser Leu Gln Ala Ser Gly Leu Gln Pro Arg
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Ser Leu Lys Ala Ala Arg Arg Ala Thr Gly Arg Pro Asp Arg Ser Arg
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Ala Ala Pro Pro Asn Met Asp Pro Asp Pro Gln Ala Gly Val Gln Val
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Gly Met Arg Val Val Arg Gly Val Asp Trp Lys Trp Gly Gln Gln Asp
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Gly Gly Glu Gly Gly Val Gly Thr Val Val Glu Leu Gly Arg His Gly
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Ser Pro Ser Thr Pro Asp Arg Thr Val Val Val Gln Trp Asp Gln Gly
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Thr Arg Thr Asn Tyr Arg Ala Gly Tyr Gln Gly Ala His Asp Leu Leu
105 110 115

ctg tac gac aac gcc cag atc ggc gtc cgg cac ccc aac atc atc tgt 497
Leu Tyr Asp Asn Ala Gln Ile Gly Val Arg His Pro Asn Ile Ile Cys
120 125 130 135

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Asp Cys Cys Lys Lys His Gly Leu Arg Gly Met Arg Trp Lys Cys Arg
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Val Cys Leu Asp Tyr Asp Leu Cys Thr Gln Cys Tyr Met His Asn Lys
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cat gag ctc gcc cac gcc ttc gac cgc tac gag acc gct cac tcg cgc 641
His Glu Leu Ala His Ala Phe Asp Arg Tyr Glu Thr Ala His Ser Arg
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cct gtc aca ctg agt ccc cgc cag ggc ctc ccg agg atc cca cta agg 689
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Gly Ser Gln Asp Gly Gly Glu Gly Lys Pro Gly Arg Val Val Asp Ile
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Ala Asp Gly Thr Thr Asn Val Tyr Arg Val Gly His Lys Gly Lys Val	
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Asp Leu Lys Cys Val Gly Glu Ala Ala Gly Gly Phe Tyr Tyr Lys Asp	
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His Leu Pro Arg Leu Gly Lys Pro Ala Glu Leu Gln Arg Arg Val Ser	
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Asp Thr Asp Val Leu Arg Glu Met Gln Glu Gly His Gly Gly Trp Asn	
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Pro Arg Met Ala Glu Phe Ile Gly Gln Thr Gly Thr Val His Arg Ile	
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Val Gly Lys Val Val Lys Val Phe Gly Asp Gly Asn Leu Arg Val Ala	
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Val Ala Gly Gln Arg Trp Thr Phe Ser Pro Ser Cys Leu Val Ala Tyr	
425 430 435	
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Arg Pro Glu Glu Asp Ala Asn Leu Asp Val Ala Glu Arg Ala Arg Glu	
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ggg	aac	cag	ccc	gag	gcc	acc	agg	gtg	ctc	ctg	agt	gct	ggg	tgc	cgg					1793									
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gcg	gac	gcc	atc	aac	agc	acc	cag	agc	aca	gca	ctg	cac	gtg	gcc	gtg					1841									
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Ile	Ser	Ala	Gly	Thr	Gly	Ala	Ser	Gly	Ile	Val	Glu	Val	Leu	Thr	Glu														
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gtg	cca	aac	atc	gat	gtt	acc	gcc	acc	aac	agc	cag	ggg	ttc	acc	ctg					2033									
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Pro Leu Val Ala Asp Gly Ala Gly Gly Asp Pro Gly Pro Leu Gln Leu	
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Ser Tyr Thr Asn His Arg Gly Arg Ser Pro Leu Asp Leu Ala Ala Glu	
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Thr Pro Asn Thr Val Thr Asn Leu His Val Gly Ala Ala Pro Gly Pro	
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Phe Ser Pro Cys Gln His Arg Thr Val Cys Glu Glu Cys Ala Arg Arg	
890 895 900	
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Met Lys Lys Cys Ile Arg Cys Gln Val Val Val Ser Lys Lys Leu Arg	
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 Pro Asp Gly Ser Glu Val Ala Ser Ala Ala Pro Ala Pro Gly Pro Pro
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 Arg Gln Leu Val Glu Glu Leu Gln Ser Arg Tyr Arg Gln Met Glu Glu
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 Cys Pro Ile Cys Arg Gln Pro Ile Arg Asp Arg Ile Gln Ile Phe Val
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Pro Gln Ala Gly Val Gln Val Gly Met Arg Val Val Arg Gly Val Asp
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Trp Lys Trp Gly Gln Gln Asp Gly Gly Glu Gly Gly Val Gly Thr Val
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Val Val Gln Trp Asp Gln Gly Thr Arg Thr Asn Tyr Arg Ala Gly Tyr
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Gln Gly Ala His Asp Leu Leu Leu Tyr Asp Asn Ala Gln Ile Gly Val
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Arg His Pro Asn Ile Ile Cys Asp Cys Cys Lys Lys His Gly Leu Arg
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Tyr	Glu	Thr	Ala	His	Ser	Arg	Pro	Val	Thr	Leu	Ser	Pro	Arg	Gln	Gly	
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Leu	Pro	Arg	Ile	Pro	Leu	Arg	Gly	Ile	Phe	Gln	Gly	Ala	Lys	Val	Val	
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Asp	Gly	Asn	Leu	Arg	Val	Ala	Val	Ala	Gly	Gln	Arg	Trp	Thr	Phe	Ser	
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Pro	Ser	Cys	Leu	Val	Ala	Tyr	Arg	Pro	Glu	Glu	Asp	Ala	Asn	Leu	Asp	
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 Asp Lys Leu Arg Ala Gln Lys Ser Asp Pro Glu His Pro Gly Arg Leu
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 Arg Arg Arg Pro Glu Gln Val Asp Thr Lys Asn Gln Gly Arg Thr Ala
 500 505 510
 Leu Gln Val Ala Ala Tyr Leu Gly Gln Val Glu Leu Ile Arg Leu Leu
 515 520 525
 Leu Gln Ala Arg Ala Gly Val Asp Leu Pro Asp Asp Glu Gly Asn Thr
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 Ile Val Glu Val Leu Thr Glu Val Pro Asn Ile Asp Val Thr Ala Thr
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 Ala Lys Lys Glu Asp Gly Phe Thr Ala Leu His Leu Ala Ala Leu Asn
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 Asn His Arg Glu Val Ala Gln Ile Leu Ile Arg Glu Gly Arg Cys Asp
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 Ser Val Asn Ala Glu Asp Glu Glu Gly Asp Thr Ala Leu His Val Ala
 740 745 750

Leu Gln Arg His Gln Leu Leu Pro Leu Val Ala Asp Gly Ala Gly Gly
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 Pro Leu Asp Leu Ala Ala Glu Gly Arg Val Leu Lys Ala Leu Gln Gly
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 850 855 860
 Val Gly Ala Ala Pro Gly Pro Glu Ala Ala Glu Cys Leu Val Cys Ser
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 Glu Leu Ala Leu Leu Val Leu Phe Ser Pro Cys Gln His Arg Thr Val
 885 890 895
 Cys Glu Glu Cys Ala Arg Arg Met Lys Lys Cys Ile Arg Cys Gln Val
 900 905 910
 Val Val Ser Lys Lys Leu Arg Pro Asp Gly Ser Glu Val Ala Ser Ala
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 Ala Pro Ala Pro Gly Pro Pro Arg Gln Leu Val Glu Glu Leu Gln Ser
 930 935 940
 Arg Tyr Arg Gln Met Glu Glu Arg Ile Thr Cys Pro Ile Cys Ile Asp
 945 950 955 960
 Ser His Ile Arg Leu Val Phe Gln Cys Gly His Gly Ala Cys Ala Pro
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 Pro Lys Asn Val Ser Gln Lys Asp Ala Glu Phe Glu Arg Thr Tyr Ala
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 Asn Lys Gln Lys Gly Ala Pro Leu Leu Phe Val Val Arg Gln Lys Glu
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 Ala Val Val Ser Phe Gln Val Pro Leu Ile Leu Arg Gly Leu Tyr Gln
 90 95 100

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 Arg Lys Tyr Leu Tyr Gln Lys Val Glu Arg Thr Leu Cys Gln Pro Pro
 105 110 115 120

acc aag aat gag tct gag atc cag ttt ttc tat gtg gac gtg tct acc 498
 Thr Lys Asn Glu Ser Glu Ile Gln Phe Tyr Val Asp Val Ser Thr
 125 130 135

ctg tca ccc gtc aat acc act tac cag ctc cga gtc aac cgt gtg gac 546
 Leu Ser Pro Val Asn Thr Thr Tyr Gln Leu Arg Val Asn Arg Val Asp
 140 145 150

aat ttt gtg ctc agg act gga gag ctg ttt acc ttt aat acc act gca 594
 Asn Phe Val Leu Arg Thr Gly Glu Leu Phe Thr Phe Asn Thr Thr Ala
 155 160 165

gcc cag ccc cag tac ttc aaa tac gag ttt cct gat ggt gtg gac tcg 642
 Ala Gln Pro Gln Tyr Phe Lys Tyr Glu Phe Pro Asp Gly Val Asp Ser
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gta att gtc aag gtg acc tcc aag aag gcc ttc ccc tgc tca gtc atc 690
 Val Ile Val Lys Val Thr Ser Lys Lys Ala Phe Pro Cys Ser Val Ile
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Ser Ile Gln Asp Val Leu Cys Pro Val Tyr Asp Leu Asp Asn Ser Val	
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gcc ttc att ggc atg tac cag acg atg act aag aag gca gcc atc act	786
Ala Phe Ile Gly Met Tyr Gln Thr Met Thr Lys Lys Ala Ala Ile Thr	
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Val Gln Arg Lys Asp Phe Pro Ser Asn Ser Phe Tyr Val Val Val Val	
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Leu Leu Ala Cys Trp Glu Asn Trp Arg Gln Arg Lys Lys Thr Leu Leu	
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Val Ala Ile Asp Arg Ala Cys Pro Glu Ser Gly His Ala Arg Val Leu	
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Ala Asp Ser Phe Pro Gly Ser Ala Pro Tyr Glu Gly Tyr Asn Tyr Gly	
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Ser Phe Glu Asn Gly Ser Gly Ser Thr Asp Gly Leu Val Glu Ser Ala	
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Gly Ser Gly Asp Leu Ser Tyr Ser Tyr Gln Gly His Asp Gln Phe Lys	
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Arg Arg Leu Pro Ser Gly Gln Met Arg Gln Leu Cys Ile Ala Met Asp	
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Arg Ser Phe Asp Ala Val Gly Pro Arg Pro Arg Leu Asp Ser Met Ser	
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Ser Val Glu Glu Asp Asp Tyr Asp Thr Leu Thr Asp Ile Asp Ser Asp	
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Lys Asn Val Ile Arg Thr Lys Gln Tyr Leu Cys Val Ala Asp Leu Ala	
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Arg Lys Asp Lys Arg Val Leu Arg Lys Lys Tyr Gln Ile Tyr Phe Trp	
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Asn Ile Ala Thr Ile Ala Val Phe Tyr Ala Leu Pro Val Val Gln Leu	
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Val Ile Thr Tyr Gln Thr Val Val Asn Val Thr Gly Asn Gln Asp Ile	
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Cys Tyr Tyr Asn Phe Leu Cys Ala His Pro Leu Gly Asn Leu Ser Ala	
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Phe Asn Asn Ile Leu Ser Asn Leu Gly Tyr Ile Leu Leu Gly Leu Leu	
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Phe Leu Leu Ile Ile Leu Gln Arg Glu Ile Asn His Asn Arg Ala Leu	
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Leu Arg Asn Asp Leu Tyr Ala Leu Glu Cys Gly Ile Pro Lys His Phe	
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Gln Lys Arg His Pro Asp Ile Asn Ala Ser Ala Tyr Ser Ala Tyr Ala	
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Cys Leu Ala Ile Val Ile Phe Phe Ser Val Leu Gly Val Val Phe Gly	
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 Asn Ile Tyr Thr Phe Asn His Thr Val Thr Arg Asn Arg Thr Glu Gly

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Glu	Arg	Thr	Leu	Cys	Gln	Pro	Pro	Thr	Lys	Asn	Glu	Ser	Glu	Ile	Gln
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Phe	Phe	Tyr	Val	Asp	Val	Ser	Thr	Leu	Ser	Pro	Val	Asn	Thr	Thr	Tyr
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Gln	Leu	Arg	Val	Asn	Arg	Val	Asp	Asn	Phe	Val	Leu	Arg	Thr	Gly	Glu
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Leu	Phe	Thr	Phe	Asn	Thr	Thr	Ala	Ala	Gln	Pro	Gln	Tyr	Phe	Lys	Tyr
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Glu	Phe	Pro	Asp	Gly	Val	Asp	Ser	Val	Ile	Val	Lys	Val	Thr	Ser	Lys
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Lys	Ala	Phe	Pro	Cys	Ser	Val	Ile	Ser	Ile	Gln	Asp	Val	Leu	Cys	Pro
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Val	Tyr	Asp	Leu	Asp	Asn	Ser	Val	Ala	Phe	Ile	Gly	Met	Tyr	Gln	Thr
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Met	Thr	Lys	Lys	Ala	Ala	Ile	Thr	Val	Gln	Arg	Lys	Asp	Phe	Pro	Ser
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Asn	Ser	Phe	Tyr	Val	Val	Val	Val	Val	Val	Lys	Thr	Glu	Asp	Gln	Ala
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Gly	Gly	Ser	Leu	Pro	Phe	Tyr	Pro	Phe	Val	Glu	Asp	Glu	Pro	Val	Asp
			260					265					270		
Gln	Gly	His	Arg	Gln	Lys	Thr	Leu	Ser	Val	Leu	Val	Ser	Gln	Ala	Val
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Thr	Ser	Glu	Ala	Tyr	Val	Gly	Gly	Met	Leu	Phe	Cys	Leu	Gly	Ile	Phe
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Glu	Ser	Gly	His	Ala	Arg	Val	Leu	Ala	Asp	Ser	Phe	Pro	Gly	Ser	Ala
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Thr	Asp	Gly	Leu	Val	Glu	Ser	Ala	Gly	Ser	Gly	Asp	Leu	Ser	Tyr	Ser
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Tyr	Gln	Gly	His	Asp	Gln	Phe	Lys	Arg	Arg	Leu	Pro	Ser	Gly	Gln	Met
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Arg	Gln	Leu	Cys	Ile	Ala	Met	Asp	Arg	Ser	Phe	Asp	Ala	Val	Gly	Pro
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Arg	Pro	Arg	Leu	Asp	Ser	Met	Ser	Ser	Val	Glu	Glu	Asp	Asp	Tyr	Asp
			420					425					430		
Thr	Leu	Thr	Asp	Ile	Asp	Ser	Asp	Lys	Asn	Val	Ile	Arg	Thr	Lys	Gln
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Tyr	Leu	Cys	Val	Ala	Asp	Leu	Ala	Arg	Lys	Asp	Lys	Arg	Val	Leu	Arg
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Lys	Lys	Tyr	Gln	Ile	Tyr	Phe	Trp	Asn	Ile	Ala	Thr	Ile	Ala	Val	Phe
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Tyr	Ala	Leu	Pro	Val	Val	Gln	Leu	Val	Ile	Thr	Tyr	Gln	Thr	Val	Val
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Asn	Val	Thr	Gly	Asn	Gln	Asp	Ile	Cys	Tyr	Tyr	Asn	Phe	Leu	Cys	Ala
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Gly	Tyr	Ile	Leu	Leu	Gly	Leu	Leu	Phe	Leu	Leu	Ile	Ile	Leu	Gln	Arg
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Glu	Ile	Asn	His	Asn	Arg	Ala	Leu	Leu	Arg	Asn	Asp	Leu	Tyr	Ala	Leu
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Glu	Cys	Gly	Ile	Pro	Lys	His	Phe	Gly	Leu	Phe	Tyr	Ala	Met	Gly	Thr
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Ala	Leu	Met	Met	Glu	Gly	Leu	Leu	Ser	Ala	Cys	Tyr	His	Val	Cys	Pro
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Asn	Tyr	Thr	Asn	Phe	Gln	Phe	Asp	Thr	Ser	Phe	Met	Tyr	Met	Ile	Ala
		595					600					605			
Gly	Leu	Cys	Met	Leu	Lys	Leu	Tyr	Gln	Lys	Arg	His	Pro	Asp	Ile	Asn
	610					615					620				
Ala	Ser	Ala	Tyr	Ser	Ala	Tyr	Ala	Cys	Leu	Ala	Ile	Val	Ile	Phe	Phe
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Ser	Val	Leu	Gly	Val	Val	Phe	Gly	Lys	Gly	Asn	Thr	Ala	Phe	Trp	Ile
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Ile Leu His Val Leu Tyr Thr Asp Cys Ile Arg Gln Cys Ser Gly Pro 690 695 700		
Leu Tyr Thr Asp Arg Met Val Leu Leu Val Met Gly Asn Ile Ile Asn 705 710 715 720		
Trp Ser Leu Ala Ala Tyr Gly Leu Ile Met Arg Pro Asn Asp Phe Ala 725 730 735		
Ser Tyr Leu Leu Ala Ile Gly Ile Cys Asn Leu Leu Leu Tyr Phe Ala 740 745 750		
Phe Tyr Ile Ile Met Lys Leu Arg Ser Gly Glu Arg Ile Lys Leu Ile 755 760 765		
Pro Leu Leu Cys Ile Val Cys Thr Ser Val Val Trp Gly Phe Ala Leu 770 775 780		
Phe Phe Phe Phe Gln Gly Leu Ser Thr Trp Gln Lys Thr Pro Ala Glu 785 790 795 800		
Ser Arg Glu His Asn Arg Asp Cys Ile Leu Leu Asp Phe Phe Asp Asp 805 810 815		
His Asp Ile Trp His Phe Leu Ser Ser Ile Ala Met Phe Gly Ser Phe 820 825 830		
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 Met Phe Ala Leu Gly Leu Pro Phe Leu Val
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Asn	Val	Ser	Gln	Lys	Asp	Ala	Glu	Phe	Glu	Arg	Thr	Tyr	Val	Asp	Glu	
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gtc	aac	agc	gag	ctg	gtc	aac	atc	tac	acc	ttc	aac	cat	act	gtg	acc	257
Val	Asn		Glu	Leu	Val	Asn	Ile	Tyr	Thr	Phe	Asn	His	Thr	Val	Thr	
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Gln	Lys	Gly	Ala	Pro		Leu	Phe	Val	Val	Arg	Gln	Lys	Glu	Ala	Val	
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gtg	tcc	ttc	cag	gtg	ccc	cta	atc	ctg	cga	ggg	atg	ttt	cag	cgc	aag	401
Val	Ser	Phe	Gln	Val	Pro	Leu	Ile	Leu	Arg	Gly	Met	Phe	Gln	Arg	Lys	
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Tyr	Leu	Tyr	Gln	Lys	Val	Glu	Arg	Thr	Leu	Cys	Gln	Pro	Pro	Thr	Lys	
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Asn	Glu	Ser	Glu	Ile	Gln	Phe	Phe	Tyr	Val	Asp	Val	Ser	Thr	Leu	Ser	
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Pro	Val	Asn	Thr	Thr	Tyr	Gln	Leu	Arg	Val	Ser	Arg	Met	Asp	Asp	Phe	
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Pro	Gln	Tyr	Phe	Lys	Tyr	Glu	Phe	Pro	Glu	Gly	Val	Asp	Ser	Val	Ile	
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Gln	Asp	Val	Leu	Cys	Pro	Val	Tyr	Asp	Leu	Asp	Asn	Asn	Val	Ala	Phe	
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gaa gat gaa ccg gtc gat caa ggg cac cgc cag aaa acc ctg tca gtg	929			
Glu Asp Glu Pro Val Asp Gln Gly His Arg Gln Lys Thr Leu Ser Val				
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Leu Val Ser Gln Ala Val Thr Ser Glu Ala Tyr Val Ser Gly Met Leu				
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300	305	310		
gcc tgc tgg gag aac tgg agg cag aag aag aag acc ctg ctg gtg gcc	1073			
Ala Cys Trp Glu Asn Trp Arg Gln Lys Lys Lys Thr Leu Leu Val Ala				
315	320	325	330	
att gac cga gcc tgc cca gaa agc ggt cac cct cga gtc ctg gct gat	1121			
Ile Asp Arg Ala Cys Pro Glu Ser Gly His Pro Arg Val Leu Ala Asp				
335	340	345		
tct ttt cct ggc agt tcc cct tat gag ggt tac aac tat ggc tcc ttt	1169			
Ser Phe Pro Gly Ser Ser Pro Tyr Glu Gly Tyr Asn Tyr Gly Ser Phe				
350	355	360		
gag aat gtt tct gga tct acc gat ggt ctg gtt gac agc gct ggc act	1217			
Glu Asn Val Ser Gly Ser Thr Asp Gly Leu Val Asp Ser Ala Gly Thr				
365	370	375		
ggg gac ctc tct tac ggt tac cag ggg cac gac cag ttc aag cgg cgc	1265			
Gly Asp Leu Ser Tyr Gly Tyr Gln Gly His Asp Gln Phe Lys Arg Arg				
380	385	390		
ctc ccc tct ggc cag atg cgg cag ctg tgc att gcc atg ggc cgc tcc	1313			
Leu Pro Ser Gly Gln Met Arg Gln Leu Cys Ile Ala Met Gly Arg Ser				
395	400	405	410	
ttt gaa cct gta ggt act cgg ccc cga gtg gac tcc atg agc tct gtg	1361			
Phe Glu Pro Val Gly Thr Arg Pro Arg Val Asp Ser Met Ser Ser Val				
415	420	425		
gag gag gat gac tac gac aca ttg acc gac atc gat tcc gac aag aat	1409			
Glu Glu Asp Asp Tyr Asp Thr Leu Thr Asp Ile Asp Ser Asp Lys Asn				
430	435	440		
gtc att cgc acc aag caa tac ctc tat gtg gct gac ctg gca cgg aag	1457			
Val Ile Arg Thr Lys Gln Tyr Leu Tyr Val Ala Asp Leu Ala Arg Lys				
445	450	455		
gac aag cgt gtt ctg cgg aaa aag tac cag atc tac ttc tgg aac att	1505			
Asp Lys Arg Val Leu Arg Lys Lys Tyr Gln Ile Tyr Phe Trp Asn Ile				
460	465	470		

gcc acc att gct gtc ttc tat gcc ctt cct gtg gtg cag ctg gtg atc	1553
Ala Thr Ile Ala Val Phe Tyr Ala Leu Pro Val Val Gln Leu Val Ile	
475 480 485 490	
acc tac cag acg gtg gtg aat gtc aca ggg aat cag gac atc tgc tac	1601
Thr Tyr Gln Thr Val Val Asn Val Thr Gly Asn Gln Asp Ile Cys Tyr	
495 500 505	
tac aac ttc ctc tgc gcc cac cca ctg ggc aat ctc agc gcc ttc aac	1649
Tyr Asn Phe Leu Cys Ala His Pro Leu Gly Asn Leu Ser Ala Phe Asn	
510 515 520	
aac atc ctc agc aac ctg ggg tac atc ctg ctg ggg ctg ctt ttc ctg	1697
Asn Ile Leu Ser Asn Leu Gly Tyr Ile Leu Leu Gly Leu Leu Phe Leu	
525 530 535	
ctc atc atc ctg caa cgg gag atc aac cac aac cgg gcc ctg ctg cgc	1745
Leu Ile Ile Leu Gln Arg Glu Ile Asn His Asn Arg Ala Leu Leu Arg	
540 545 550	
aat gac ctc tgt gcc ctg gaa tgt ggg atc ccc aaa cac ttt ggg ctt	1793
Asn Asp Leu Cys Ala Leu Glu Cys Gly Ile Pro Lys His Phe Gly Leu	
555 560 565 570	
ttc tac gcc atg ggc aca gcc ctg atg atg gag ggg ctg ctc agt gct	1841
Phe Tyr Ala Met Gly Thr Ala Leu Met Met Glu Gly Leu Leu Ser Ala	
575 580 585	
tgc tat cat gtg tgc ccc aac tat acc aat ttc cag ttt gac aca tcg	1889
Cys Tyr His Val Cys Pro Asn Tyr Thr Asn Phe Gln Phe Asp Thr Ser	
590 595 600	
ttc atg tac atg atc gcc gga ctc tgc atg ctg aag ctc tac cag aag	1937
Phe Met Tyr Met Ile Ala Gly Leu Cys Met Leu Lys Leu Tyr Gln Lys	
605 610 615	
cgg cac ccg gac atc aac gcc agc gcc tac agt gcc tac gcc tgc ctg	1985
Arg His Pro Asp Ile Asn Ala Ser Ala Tyr Ser Ala Tyr Ala Cys Leu	
620 625 630	
gcc att gtc atc ttc ttc tct gtg ctg ggc gtg gtc ttt ggc aaa ggg	2033
Ala Ile Val Ile Phe Phe Ser Val Leu Gly Val Val Phe Gly Lys Gly	
635 640 645 650	
aac acg gcg ttc tgg atc gtc ttc tcc atc att cac atc atc gcc acc	2081
Asn Thr Ala Phe Trp Ile Val Phe Ser Ile Ile His Ile Ile Ala Thr	
655 660 665	
ctg ctc ctc agc acg cag ctc tat tac atg ggc cgg tgg aaa ctg gac	2129
Leu Leu Leu Ser Thr Gln Leu Tyr Tyr Met Gly Arg Trp Lys Leu Asp	
670 675 680	
tcg ggg atc ttc cgc cgc atc ctc cac gtg ctc tac aca gac tgc atc	2177
Ser Gly Ile Phe Arg Arg Ile Leu His Val Leu Tyr Thr Asp Cys Ile	
685 690 695	

cgg cag tgc agc ggg ccg ctc tac gtg gac cgc atg gtg ctg ctg gtc 2225
 Arg Gln Cys Ser Gly Pro Leu Tyr Val Asp Arg Met Val Leu Leu Val
 700 705 710

atg ggc aac gtc atc aac tgg tcg ctg gct gcc tat ggg ctt atc atg 2273
 Met Gly Asn Val Ile Asn Trp Ser Leu Ala Ala Tyr Gly Leu Ile Met
 715 720 725 730

cgc ccc aat gat ttc gct tcc tac ttg ttg gcc att ggc atc tgc aac 2321
 Arg Pro Asn Asp Phe Ala Ser Tyr Leu Leu Ala Ile Gly Ile Cys Asn
 735 740 745

ctg ctc ctt tac ttc gcc ttc tac atc atc atg aag ctc cgg agt ggg 2369
 Leu Leu Leu Tyr Phe Ala Phe Tyr Ile Ile Met Lys Leu Arg Ser Gly
 750 755 760

gag agg atc aag ctc atc ccc ctg ctc tgc atc gtt tgc acc tcc gtg 2417
 Glu Arg Ile Lys Leu Ile Pro Leu Leu Cys Ile Val Cys Thr Ser Val
 765 770 775

gtc tgg ggc ttc gcg ctc ttc ttc ttc ttc cag gga ctc agc acc tgg 2465
 Val Trp Gly Phe Ala Leu Phe Phe Phe Phe Gln Gly Leu Ser Thr Trp
 780 785 790

cag aaa acc cct gca gag tcg agg gag cac aac cgg gac tgc atc ctc 2513
 Gln Lys Thr Pro Ala Glu Ser Arg Glu His Asn Arg Asp Cys Ile Leu
 795 800 805 810

ctc gac ttc ttt gac gac cac gac atc tgg cac ttc ctc tcc tcc atc 2561
 Leu Asp Phe Phe Asp Asp His Asp Ile Trp His Phe Leu Ser Ser Ile
 815 820 825

gcc atg ttc ggg tcc ttc ctg gta agc ggg cct ccc ggc cga gcc ggg 2609
 Ala Met Phe Gly Ser Phe Leu Val Ser Gly Pro Pro Gly Arg Ala Gly
 830 835 840

tgg gta cgt gaa ggt agc agc tgc ctc ctt ccc tgt ggc tgatctggcg 2658
 Trp Val Arg Glu Gly Ser Ser Cys Leu Leu Pro Cys Gly
 845 850 855

tccacacccc aggtgttgct gacactggat gacgacctgg atacttagaa aggggcttca 2718

ggaaggggatg tgctgtttcc ctctacgtgc ccagtcctag cctcgctcta ggaccaggg 2778

ctggcttcta agtttccgtc cagtcttcag gcaagttctg tgttagtcac gcacacacat 2838

acctatgaaa ccttggagtt tacaaagaat tgccccagct ctgggcaccc tggccaccct 2898

ggtccttgga tccccttcgt cccacctggt ccacccaga tgctgaggat gggggagctc 2958

aggcggggcc tctgcttttg ggatgggaat gtgtttttct cccaaacttg tttttatagc 3018

tctgcttgaa gggctgggag atgaggtggg tctggatctt ttctcagagc gtctccatgc 3078

tatggttgca tttccgtttt ctatgaatga atttgcattc aataaacaac cagactcagt 3138

<210> 166
 <211> 855
 <212> PRT
 <213> Homo sapiens

<400> 166

Met	Phe	Ala	Leu	Gly	Leu	Pro	Phe	Leu	Val	Leu	Leu	Val	Ala	Ser	Val
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Glu	Ser	His	Leu	Gly	Val	Leu	Gly	Pro	Lys	Asn	Val	Ser	Gln	Lys	Asp
			20					25					30		
Ala	Glu	Phe	Glu	Arg	Thr	Tyr	Val	Asp	Glu	Val	Asn	Ser	Glu	Leu	Val
		35					40					45			
Asn	Ile	Tyr	Thr	Phe	Asn	His	Thr	Val	Thr	Arg	Asn	Arg	Thr	Glu	Gly
	50					55					60				
Val	Arg	Val	Ser	Val	Asn	Val	Leu	Asn	Lys	Gln	Lys	Gly	Ala	Pro	Leu
65					70					75					80
Leu	Phe	Val	Val	Arg	Gln	Lys	Glu	Ala	Val	Val	Ser	Phe	Gln	Val	Pro
				85					90					95	
Leu	Ile	Leu	Arg	Gly	Met	Phe	Gln	Arg	Lys	Tyr	Leu	Tyr	Gln	Lys	Val
			100					105					110		
Glu	Arg	Thr	Leu	Cys	Gln	Pro	Pro	Thr	Lys	Asn	Glu	Ser	Glu	Ile	Gln
			115					120				125			
Phe	Phe	Tyr	Val	Asp	Val	Ser	Thr	Leu	Ser	Pro	Val	Asn	Thr	Thr	Tyr
		130				135						140			
Gln	Leu	Arg	Val	Ser	Arg	Met	Asp	Asp	Phe	Val	Leu	Arg	Thr	Gly	Glu
145					150					155					160
Gln	Phe	Ser	Phe	Asn	Thr	Thr	Ala	Ala	Gln	Pro	Gln	Tyr	Phe	Lys	Tyr
				165					170					175	
Glu	Phe	Pro	Glu	Gly	Val	Asp	Ser	Val	Ile	Val	Lys	Val	Thr	Ser	Asn
			180					185					190		
Lys	Ala	Phe	Pro	Cys	Ser	Val	Ile	Ser	Ile	Gln	Asp	Val	Leu	Cys	Pro
		195				200						205			
Val	Tyr	Asp	Leu	Asp	Asn	Asn	Val	Ala	Phe	Ile	Gly	Met	Tyr	Gln	Thr
		210				215					220				
Met	Thr	Lys	Lys	Ala	Ala	Ile	Thr	Val	Gln	Arg	Lys	Asp	Phe	Pro	Ser
225					230					235					240
Asn	Ser	Phe	Tyr	Val	Val	Val	Val	Val	Lys	Thr	Glu	Asp	Gln	Ala	Cys
				245					250					255	
Gly	Gly	Ser	Leu	Pro	Phe	Tyr	Pro	Phe	Ala	Glu	Asp	Glu	Pro	Val	Asp
			260					265					270		

Gln Gly His Arg Gln Lys Thr Leu Ser Val Leu Val Ser Gln Ala Val
 275 280 285
 Thr Ser Glu Ala Tyr Val Ser Gly Met Leu Phe Cys Leu Gly Ile Phe
 290 295 300
 Leu Ser Phe Tyr Leu Leu Thr Val Leu Leu Ala Cys Trp Glu Asn Trp
 305 310 315 320
 Arg Gln Lys Lys Lys Thr Leu Leu Val Ala Ile Asp Arg Ala Cys Pro
 325 330 335
 Glu Ser Gly His Pro Arg Val Leu Ala Asp Ser Phe Pro Gly Ser Ser
 340 345 350
 Pro Tyr Glu Gly Tyr Asn Tyr Gly Ser Phe Glu Asn Val Ser Gly Ser
 355 360 365
 Thr Asp Gly Leu Val Asp Ser Ala Gly Thr Gly Asp Leu Ser Tyr Gly
 370 375 380
 Tyr Gln Gly His Asp Gln Phe Lys Arg Arg Leu Pro Ser Gly Gln Met
 385 390 395 400
 Arg Gln Leu Cys Ile Ala Met Gly Arg Ser Phe Glu Pro Val Gly Thr
 405 410 415
 Arg Pro Arg Val Asp Ser Met Ser Ser Val Glu Glu Asp Asp Tyr Asp
 420 425 430
 Thr Leu Thr Asp Ile Asp Ser Asp Lys Asn Val Ile Arg Thr Lys Gln
 435 440 445
 Tyr Leu Tyr Val Ala Asp Leu Ala Arg Lys Asp Lys Arg Val Leu Arg
 450 455 460
 Lys Lys Tyr Gln Ile Tyr Phe Trp Asn Ile Ala Thr Ile Ala Val Phe
 465 470 475 480
 Tyr Ala Leu Pro Val Val Gln Leu Val Ile Thr Tyr Gln Thr Val Val
 485 490 495
 Asn Val Thr Gly Asn Gln Asp Ile Cys Tyr Tyr Asn Phe Leu Cys Ala
 500 505 510
 His Pro Leu Gly Asn Leu Ser Ala Phe Asn Asn Ile Leu Ser Asn Leu
 515 520 525
 Gly Tyr Ile Leu Leu Gly Leu Leu Phe Leu Leu Ile Ile Leu Gln Arg
 530 535 540
 Glu Ile Asn His Asn Arg Ala Leu Leu Arg Asn Asp Leu Cys Ala Leu
 545 550 555 560
 Glu Cys Gly Ile Pro Lys His Phe Gly Leu Phe Tyr Ala Met Gly Thr
 565 570 575

Ala Leu Met Met Glu Gly Leu Leu Ser Ala Cys Tyr His Val Cys Pro
 580 585 590
 Asn Tyr Thr Asn Phe Gln Phe Asp Thr Ser Phe Met Tyr Met Ile Ala
 595 600 605
 Gly Leu Cys Met Leu Lys Leu Tyr Gln Lys Arg His Pro Asp Ile Asn
 610 615 620
 Ala Ser Ala Tyr Ser Ala Tyr Ala Cys Leu Ala Ile Val Ile Phe Phe
 625 630 635 640
 Ser Val Leu Gly Val Val Phe Gly Lys Gly Asn Thr Ala Phe Trp Ile
 645 650 655
 Val Phe Ser Ile Ile His Ile Ile Ala Thr Leu Leu Leu Ser Thr Gln
 660 665 670
 Leu Tyr Tyr Met Gly Arg Trp Lys Leu Asp Ser Gly Ile Phe Arg Arg
 675 680 685
 Ile Leu His Val Leu Tyr Thr Asp Cys Ile Arg Gln Cys Ser Gly Pro
 690 695 700
 Leu Tyr Val Asp Arg Met Val Leu Leu Val Met Gly Asn Val Ile Asn
 705 710 715 720
 Trp Ser Leu Ala Ala Tyr Gly Leu Ile Met Arg Pro Asn Asp Phe Ala
 725 730 735
 Ser Tyr Leu Leu Ala Ile Gly Ile Cys Asn Leu Leu Leu Tyr Phe Ala
 740 745 750
 Phe Tyr Ile Ile Met Lys Leu Arg Ser Gly Glu Arg Ile Lys Leu Ile
 755 760 765
 Pro Leu Leu Cys Ile Val Cys Thr Ser Val Val Trp Gly Phe Ala Leu
 770 775 780
 Phe Phe Phe Phe Gln Gly Leu Ser Thr Trp Gln Lys Thr Pro Ala Glu
 785 790 795 800
 Ser Arg Glu His Asn Arg Asp Cys Ile Leu Leu Asp Phe Phe Asp Asp
 805 810 815
 His Asp Ile Trp His Phe Leu Ser Ser Ile Ala Met Phe Gly Ser Phe
 820 825 830
 Leu Val Ser Gly Pro Pro Gly Arg Ala Gly Trp Val Arg Glu Gly Ser
 835 840 845
 Ser Cys Leu Leu Pro Cys Gly
 850 855

<210> 167

<211> 2815
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (56)..(571)

<400> 167
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 agg cgc cag cct gcg aag gtg gcg gcg ctg ctg ctc ggg ctg ctc ttg 106
 Arg Arg Gln Pro Ala Lys Val Ala Ala Leu Leu Leu Gly Leu Leu Leu
 5 10 15
 gag tgc aca gaa gcc aaa aag cat tgc tgg tat ttc gaa gga ctc tat 154
 Glu Cys Thr Glu Ala Lys Lys His Cys Trp Tyr Phe Glu Gly Leu Tyr
 20 25 30
 cca acc tat tat ata tgc cgc tcc tac gag gac tgc tgt ggc tcc agg 202
 Pro Thr Tyr Tyr Ile Cys Arg Ser Tyr Glu Asp Cys Cys Gly Ser Arg
 35 40 45
 tgc tgt gtg cgg gcc ctc tcc ata cag agg ctg tgg tac ttc tgg ttc 250
 Cys Cys Val Arg Ala Leu Ser Ile Gln Arg Leu Trp Tyr Phe Trp Phe
 50 55 60 65
 ctt ctg atg atg ggc gtg ctt ttc tgc tgc gga gcc ggc ttc ttc atc 298
 Leu Leu Met Met Gly Val Leu Phe Cys Gly Ala Gly Phe Phe Ile
 70 75 80
 cgg agg cgc atg tac ccc ccg ccg ctg atc gag gag cca gcc ttc aat 346
 Arg Arg Arg Met Tyr Pro Pro Pro Leu Ile Glu Glu Pro Ala Phe Asn
 85 90 95
 gtg tcc tac acc agg cag ccc cca aat ccc ggc cca gga gcc cag cag 394
 Val Ser Tyr Thr Arg Gln Pro Pro Asn Pro Gly Pro Gly Ala Gln Gln
 100 105 110
 ccg ggg ccg ccc tat tac acc gac cca gga gga ccg ggg atg aac cct 442
 Pro Gly Pro Pro Tyr Tyr Thr Asp Pro Gly Gly Pro Gly Met Asn Pro
 115 120 125
 gtc ggg aat tcc atg gca atg gct ttc cag gtc cca ccc aac tca ccc 490
 Val Gly Asn Ser Met Ala Met Ala Phe Gln Val Pro Pro Asn Ser Pro
 130 135 140 145
 cag ggg agt gtg gcc tgc ccg ccc cct cca gcc tac tgc aac acg cct 538
 Gln Gly Ser Val Ala Cys Pro Pro Pro Pro Ala Tyr Cys Asn Thr Pro
 150 155 160
 ccg ccc ccg tac gaa cag gta gtg aag gcc aag tagtggggtg cccacgtgca 591
 Pro Pro Pro Tyr Glu Gln Val Val Lys Ala Lys
 165 170

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 gacgtcctta cgggtggcgtg accagatcta cgggagagag actgagagga agaaggcagt 891
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 cacattctct gataggaatc acagctcacc ccaggatctc acaggtagtc tctgagtag 1791
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 gggc 2815

<210> 168
 <211> 172
 <212> PRT
 <213> Homo sapiens

<400> 168

Met	Arg	Arg	Gln	Pro	Ala	Lys	Val	Ala	Ala	Leu	Leu	Leu	Gly	Leu	Leu	1	5	10	15
Leu	Glu	Cys	Thr	Glu	Ala	Lys	Lys	His	Cys	Trp	Tyr	Phe	Glu	Gly	Leu	20	25	30	
Tyr	Pro	Thr	Tyr	Tyr	Ile	Cys	Arg	Ser	Tyr	Glu	Asp	Cys	Cys	Gly	Ser	35	40	45	
Arg	Cys	Cys	Val	Arg	Ala	Leu	Ser	Ile	Gln	Arg	Leu	Trp	Tyr	Phe	Trp	50	55	60	
Phe	Leu	Leu	Met	Met	Gly	Val	Leu	Phe	Cys	Cys	Gly	Ala	Gly	Phe	Phe	65	70	75	80
Ile	Arg	Arg	Arg	Met	Tyr	Pro	Pro	Pro	Leu	Ile	Glu	Glu	Pro	Ala	Phe	85	90	95	
Asn	Val	Ser	Tyr	Thr	Arg	Gln	Pro	Pro	Asn	Pro	Gly	Pro	Gly	Ala	Gln	100	105	110	
Gln	Pro	Gly	Pro	Pro	Tyr	Tyr	Thr	Asp	Pro	Gly	Gly	Pro	Gly	Met	Asn	115	120	125	
Pro	Val	Gly	Asn	Ser	Met	Ala	Met	Ala	Phe	Gln	Val	Pro	Pro	Asn	Ser	130	135	140	
Pro	Gln	Gly	Ser	Val	Ala	Cys	Pro	Pro	Pro	Pro	Ala	Tyr	Cys	Asn	Thr	145	150	155	160
Pro	Pro	Pro	Pro	Tyr	Glu	Gln	Val	Val	Lys	Ala	Lys								

165

170

<210> 169
 <211> 3337
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (136)..(1755)

<400> 169
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 agaatctgag cagca atg ccg ttt gct gaa gac aag acc tat aag tat atc 171
 Met Pro Phe Ala Glu Asp Lys Thr Tyr Lys Tyr Ile
 1 5 10
 tgc cgc aat ttc agc aat ttt tgc aat gtg gat gtt gta gag att ctg 219
 Cys Arg Asn Phe Ser Asn Phe Cys Asn Val Asp Val Val Glu Ile Leu
 15 20 25
 cct tac ctg ccc tgc ctc aca gca aga gac cag gat cga ctg cgg gcc 267
 Pro Tyr Leu Pro Cys Leu Thr Ala Arg Asp Gln Asp Arg Leu Arg Ala
 30 35 40
 acc tgc aca ctc tca ggg aac cgg gac acc ctc tgg cat ctc ttc aat 315
 Thr Cys Thr Leu Ser Gly Asn Arg Asp Thr Leu Trp His Leu Phe Asn
 45 50 55 60
 acc ctt cag cgg cgg ccc ggc tgg gtg gag tac ttc att gcg gca ctg 363
 Thr Leu Gln Arg Arg Pro Gly Trp Val Glu Tyr Phe Ile Ala Ala Leu
 65 70 75
 agg ggc tgt gag cta gtt gat ctc gcg gac gaa gtg gcc tct gtc tac 411
 Arg Gly Cys Glu Leu Val Asp Leu Ala Asp Glu Val Ala Ser Val Tyr
 80 85 90
 cag agc tac cag cct cgg acc tcg gac cgt ccc cca gac cca ctg gag 459
 Gln Ser Tyr Gln Pro Arg Thr Ser Asp Arg Pro Pro Asp Pro Leu Glu
 95 100 105
 cca ccg tca ctt cct gct gag agg cca ggg ccc ccc aca cct gct gcg 507
 Pro Pro Ser Leu Pro Ala Glu Arg Pro Gly Pro Pro Thr Pro Ala Ala
 110 115 120
 gcc cac agc atc ccc tac aac agc tgc aga gag aag gag cca agt tac 555
 Ala His Ser Ile Pro Tyr Asn Ser Cys Arg Glu Lys Glu Pro Ser Tyr
 125 130 135 140
 ccc atg cct gtc cag gag acc cag gcg cca gag tcc cca gga gag aat 603
 Pro Met Pro Val Gln Glu Thr Gln Ala Pro Glu Ser Pro Gly Glu Asn
 145 150 155

tca gag caa gcc ctg cag acg ctc agc ccc aga gcc atc cca agg aat	651
Ser Glu Gln Ala Leu Gln Thr Leu Ser Pro Arg Ala Ile Pro Arg Asn	
160 165 170	
cca gat ggt ggc ccc ctg gag tcc tcc tct gac ctg gca gcc ctc agc	699
Pro Asp Gly Gly Pro Leu Glu Ser Ser Ser Asp Leu Ala Ala Leu Ser	
175 180 185	
cct ctg acc tcc agc ggg cat cag gag cag gac aca gaa ctg ggc agt	747
Pro Leu Thr Ser Ser Gly His Gln Glu Gln Asp Thr Glu Leu Gly Ser	
190 195 200	
acc cac aca gca ggt gcg acc tcc agc ctc aca cca tcc cgt ggc cct	795
Thr His Thr Ala Gly Ala Thr Ser Ser Leu Thr Pro Ser Arg Gly Pro	
205 210 215 220	
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Val Ser Pro Ser Val Ser Phe Gln Pro Leu Ala Arg Ser Thr Pro Arg	
225 230 235	
gca agc cgc ttg cct gga ccc aca ggg tca gtt gta tct act ggc acc	891
Ala Ser Arg Leu Pro Gly Pro Thr Gly Ser Val Val Ser Thr Gly Thr	
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Ser Phe Ser Ser Ser Ser Pro Gly Leu Ala Ser Ala Gly Ala Ala Glu	
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Gly Lys Gln Gly Ala Glu Ser Asp Gln Ala Glu Pro Ile Ile Cys Ser	
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agt ggg gca gag gca cct gcc aac tct ctg ccc tcc aaa gtg cct acc	1035
Ser Gly Ala Glu Ala Pro Ala Asn Ser Leu Pro Ser Lys Val Pro Thr	
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acc ttg atg cct gtg aac aca gtg gcc ctg aaa gtg cct gcc aac cca	1083
Thr Leu Met Pro Val Asn Thr Val Ala Leu Lys Val Pro Ala Asn Pro	
305 310 315	
gca tct gtc agc aca gtg ccc tcc aag ttg cca act agc tca aag ccc	1131
Ala Ser Val Ser Thr Val Pro Ser Lys Leu Pro Thr Ser Ser Lys Pro	
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cct ggt gca gtg cct tct aat gcg ctc acc aat cca gca cca tcc aaa	1179
Pro Gly Ala Val Pro Ser Asn Ala Leu Thr Asn Pro Ala Pro Ser Lys	
335 340 345	
ttg ccc atc aac tca acc cgt gct ggc atg gtg cca tcc aaa gtg cct	1227
Leu Pro Ile Asn Ser Thr Arg Ala Gly Met Val Pro Ser Lys Val Pro	
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act agc atg gtg ctc acc aag gtg tct gcc agc aca gtc ccc act gac	1275
Thr Ser Met Val Leu Thr Lys Val Ser Ala Ser Thr Val Pro Thr Asp	
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 Gly Ser Ser Arg Asn Glu Glu Thr Pro Ala Ala Pro Thr Pro Ala Gly
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gcc act gga ggc agc tca gcc tgg cta gac agc agc tct gag aat agg 1371
 Ala Thr Gly Gly Ser Ser Ala Trp Leu Asp Ser Ser Ser Glu Asn Arg
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ggc ctt ggg tcg gag ctg agt aag cct gcc gtg ctg gca tcc cag gta 1419
 Gly Leu Gly Ser Glu Leu Ser Lys Pro Gly Val Leu Ala Ser Gln Val
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gac agc ccg ttc tcg ggc tgc ttc gag gat ctt gcc atc agt gcc agc 1467
 Asp Ser Pro Phe Ser Gly Cys Phe Glu Asp Leu Ala Ile Ser Ala Ser
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acc tcc ttg ggc atg ggg ccc tgc cat ggc cca gag gag aat gag tat 1515
 Thr Ser Leu Gly Met Gly Pro Cys His Gly Pro Glu Glu Asn Glu Tyr
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aag tcc gag ggc acc ttt ggg atc cac gtg gct gag aac ccc agc atc 1563
 Lys Ser Glu Gly Thr Phe Gly Ile His Val Ala Glu Asn Pro Ser Ile
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 Gln Leu Leu Glu Gly Asn Pro Gly Pro Pro Ala Asp Pro Asp Gly Gly
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ccc agg cca caa gcc gac cgg aag ttc cag gag agg gag gtg cca tgc 1659
 Pro Arg Pro Gln Ala Asp Arg Lys Phe Gln Glu Arg Glu Val Pro Cys
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cac agg ccc tca cct ggg gct ctg tgg ctc cag gtg gct gtg aca ggg 1707
 His Arg Pro Ser Pro Gly Ala Leu Trp Leu Gln Val Ala Val Thr Gly
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gtg ctg gta gtc aca ctc ctg gtg gtg ctg tac cgg cgg cgt ctg cac 1755
 Val Leu Val Val Thr Leu Leu Val Val Leu Tyr Arg Arg Arg Leu His
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<213> Homo sapiens

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Ser Gly Asn Arg Asp Thr Leu Trp His Leu Phe Asn Thr Leu Gln Arg
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Arg Pro Gly Trp Val Glu Tyr Phe Ile Ala Ala Leu Arg Gly Cys Glu

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Pro Arg Thr	Ser Asp Arg	Pro Pro Asp	Pro Leu Glu	Pro Pro Ser	Leu	
	100		105		110	
Pro Ala Glu	Arg Pro Gly	Pro Pro Thr	Pro Ala Ala	Ala His Ser	Ile	
	115		120		125	
Pro Tyr Asn	Ser Cys Arg	Glu Lys Glu	Pro Ser Tyr	Pro Met Pro	Val	
	130		135		140	
Gln Glu Thr	Gln Ala Pro	Glu Ser Pro	Gly Glu Asn	Ser Glu Gln	Ala	
	145		150		155	
Leu Gln Thr	Leu Ser Pro	Arg Ala Ile	Pro Arg Asn	Pro Asp Gly	Gly	
	165		170		175	
Pro Leu Glu	Ser Ser Asp	Leu Ala Ala	Leu Ser Pro	Leu Thr Ser		
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Ser Gly His	Gln Glu Gln	Asp Thr Glu	Leu Gly Ser	Thr His Thr	Ala	
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Gly Ala Thr	Ser Ser Leu	Thr Pro Ser	Arg Gly Pro	Val Ser Pro	Ser	
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Val Ser Phe	Gln Pro Leu	Ala Arg Ser	Thr Pro Arg	Ala Ser Arg	Leu	
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Pro Gly Pro	Thr Gly Ser	Val Val Ser	Thr Gly Thr	Ser Phe Ser	Ser	
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Ser Ser Pro	Gly Leu Ala	Ser Ala Gly	Ala Ala Glu	Gly Lys Gln	Gly	
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Ala Glu Ser	Asp Gln Ala	Glu Pro Ile	Ile Cys Ser	Ser Gly Ala	Glu	
	275		280		285	
Ala Pro Ala	Asn Ser Leu	Pro Ser Lys	Val Pro Thr	Thr Leu Met	Pro	
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Val Asn Thr	Val Ala Leu	Lys Val Pro	Ala Asn Pro	Ala Ser Val	Ser	
	305		310		315	
Thr Val Pro	Ser Lys Leu	Pro Thr Ser	Ser Lys Pro	Pro Gly Ala	Val	
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Pro Ser Asn	Ala Leu Thr	Asn Pro Ala	Pro Ser Lys	Leu Pro Ile	Asn	
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Ser Thr Arg	Ala Gly Met	Val Pro Ser	Lys Val Pro	Thr Ser Met	Val	
	355		360		365	
Leu Thr Lys	Val Ser Ala	Ser Thr Val	Pro Thr Asp	Gly Ser Ser	Arg	

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 Asn Glu Glu Thr Pro Ala Ala Pro Thr Pro Ala Gly Ala Thr Gly Gly
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 Ser Ser Ala Trp Leu Asp Ser Ser Ser Glu Asn Arg Gly Leu Gly Ser
 405 410 415
 Glu Leu Ser Lys Pro Gly Val Leu Ala Ser Gln Val Asp Ser Pro Phe
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 Ser Gly Cys Phe Glu Asp Leu Ala Ile Ser Ala Ser Thr Ser Leu Gly
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 Met Gly Pro Cys His Gly Pro Glu Glu Asn Glu Tyr Lys Ser Glu Gly
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 Thr Phe Gly Ile His Val Ala Glu Asn Pro Ser Ile Gln Leu Leu Glu
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 485 490 495
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 Met His Lys Arg Lys Gly Pro Pro Gly Pro Pro Gly Arg Gly Ala Ala
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 gcc gcc cgc cag ctg gcc ctg ctg gtt gac ctc tcc cca gat ggc ctg 337

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Met	Ile	Pro	Glu	Asp	Gly	Ala	Asn	Asp	Glu	Glu	Leu	Glu	Ala	Glu	Phe	
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Leu	Ala	Leu	Val	Gly	Gly	Gln	Pro	Pro	Ala	Leu	Glu	Lys	Leu	Lys	Gly	
	50					55					60					
aaa	ggt	ccc	ttg	ccg	atg	gag	gcc	att	gag	aag	atg	gcc	agc	ctg	tgc	481
Lys	Gly	Pro	Leu	Pro	Met	Glu	Ala	Ile	Glu	Lys	Met	Ala	Ser	Leu	Cys	
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atg	aga	gac	ccg	gat	gag	gat	gag	gag	gag	ggg	acg	gat	gag	gac	gac	529
Met	Arg	Asp	Pro	Asp	Glu	Asp	Glu	Glu	Glu	Gly	Thr	Asp	Glu	Asp	Asp	
				85					90					95		
ttg	gag	gct	gat	gat	gac	ctg	ctg	gcg	gag	cta	aat	gag	gtc	ctt	gga	577
Leu	Glu	Ala	Asp	Asp	Asp	Leu	Leu	Ala	Glu	Leu	Asn	Glu	Val	Leu	Gly	
			100					105					110			
gag	gag	cag	aag	gct	tca	gag	acc	cca	cct	cct	gtg	gcc	cag	ccg	aag	625
Glu	Glu	Gln	Lys	Ala	Ser	Glu	Thr	Pro	Pro	Pro	Val	Ala	Gln	Pro	Lys	
		115					120					125				
cct	gag	gcc	cct	cat	ccg	ggg	ctg	gag	acc	acc	ttg	cag	gag	agg	ctg	673
Pro	Glu	Ala	Pro	His	Pro	Gly	Leu	Glu	Thr	Thr	Leu	Gln	Glu	Arg	Leu	
	130					135					140					
gcg	ctc	tat	cag	aca	gca	att	gaa	agc	gcc	aga	caa	gct	gga	gac	agc	721
Ala	Leu	Tyr	Gln	Thr	Ala	Ile	Glu	Ser	Ala	Arg	Gln	Ala	Gly	Asp	Ser	
145					150				155						160	
gcc	aag	atg	cgg	cgc	tac	gat	cgg	ggg	ctt	aaa	aca	ctg	gaa	aac	ctg	769
Ala	Lys	Met	Arg	Arg	Tyr	Asp	Arg	Gly	Leu	Lys	Thr	Leu	Glu	Asn	Leu	
			165					170						175		
ctc	gcc	tcc	atc	cgt	aag	ggc	aat	gcc	att	gac	gaa	gcg	gac	atc	ccg	817
Leu	Ala	Ser	Ile	Arg	Lys	Gly	Asn	Ala	Ile	Asp	Glu	Ala	Asp	Ile	Pro	
			180				185						190			
ccg	cca	gtg	gcc	ata	gga	aaa	ggc	ccg	gcg	tcc	acg	cct	acc	tac	agc	865
Pro	Pro	Val	Ala	Ile	Gly	Lys	Gly	Pro	Pro	Ala	Ser	Thr	Pro	Thr	Ser	
		195					200					205				
cct	gca	ccc	acc	cag	ccg	gcc	cct	aga	atc	gcg	tca	gcc	cca	gag	ccc	913
Pro	Ala	Pro	Thr	Gln	Pro	Ala	Pro	Arg	Ile	Ala	Ser	Ala	Pro	Glu	Pro	
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Arg	Val	Thr	Leu	Glu	Gly	Pro	Ser	Ala	Thr		Pro	Ala	Ser	Ser	Pro	
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ggc	ttg	gct	aag	ccc	cag	atg	ccc	cca	ggt	ccc	tgc	agc	cct	ggc	cct	1009
Gly	Leu	Ala	Lys	Pro	Gln	Met	Pro	Pro	Gly	Pro	Cys	Ser	Pro	Gly	Pro	

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Val Ala Lys Ser Phe Asp Ala Val Leu Glu Ala Leu Ser Arg Gly Glu																				
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Pro Val Asp Leu Ser Cys Leu Pro Pro Pro Pro Asp Gln Leu Pro Pro																				
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Ser Thr Thr Glu Val Pro Pro Pro Arg Thr Leu Leu Glu Ala Leu																				
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Lys Gly Asp Gln Arg Lys Ala Arg Met His Glu Arg Ile Val Lys Gln																				
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Tyr Gln Asp Ala Ile Arg Ala His Lys Ala Gly Arg Ala Val Asp Val																				
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gcc cca ccc tca aga act ccc cag tgc gga tca gcc cca aca gcc aaa	1681																			
Ala Pro Pro Ser Arg Thr Pro Gln Ser Gly Ser Ala Pro Thr Ala Lys																				
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Leu Glu Gly Arg Lys Lys Gln Leu Leu Gln Ala Ala Leu Arg Ala Lys	
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Gln Lys Asn Asp Val Glu Gly Ala Lys Met His Leu Arg Gln Ala Lys	
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Gly Leu Glu Pro Met Leu Glu Ala Ser Arg Asn Gly Leu Pro Val Asp	
530 535 540	
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Ile Thr Lys Val Pro Pro Ala Pro Val Asn Lys Asp Asp Phe Ala Leu	
545 550 555 560	
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Gly Glu Leu Thr Lys Leu Ile Arg Gln Gln His Glu Met Cys Leu Asn	
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Phe Glu Lys Leu Ala Glu Asp Cys Lys Arg Ser Met Asp Ile Leu Lys	
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Arg Thr Phe Ser Val Ile Lys Ile Phe Pro Asp Leu Ser Ser Asn Asp	
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690 695 700	

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Thr Asp Ser Pro Glu Phe Lys Glu Gln Phe Lys Leu Cys Ile Asn Arg	
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755 760 765	
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Glu Ile Leu Glu Val Leu Asp Gly Arg Arg Pro Thr Gly Gly Arg Leu	
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Gln Asp Ile Met Gln Arg Ser Gln Trp Gln Arg Ala Gln Leu Glu Gln	
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Gly Gly Val Gly Ile Arg Arg Glu Tyr Thr Ala Gln Leu Glu Arg Gln	
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cttctgtttc ctccccagcc ttaaccccaa agccctctg caccctaaag aagccactga 3484
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ccagcacatg gaataaaaata gccagggccca cactc 3579

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<211> 951
<212> PRT
<213> Homo sapiens

<400> 172
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Met Ile Pro Glu Asp Gly Ala Asn Asp Glu Glu Leu Glu Ala Glu Phe
35 40 45
Leu Ala Leu Val Gly Gly Gln Pro Pro Ala Leu Glu Lys Leu Lys Gly
50 55 60
Lys Gly Pro Leu Pro Met Glu Ala Ile Glu Lys Met Ala Ser Leu Cys
65 70 75 80
Met Arg Asp Pro Asp Glu Asp Glu Glu Glu Gly Thr Asp Glu Asp Asp
85 90 95
Leu Glu Ala Asp Asp Asp Leu Leu Ala Glu Leu Asn Glu Val Leu Gly
100 105 110
Glu Glu Gln Lys Ala Ser Glu Thr Pro Pro Pro Val Ala Gln Pro Lys
115 120 125
Pro Glu Ala Pro His Pro Gly Leu Glu Thr Thr Leu Gln Glu Arg Leu
130 135 140

Ala	Leu	Tyr	Gln	Thr	Ala	Ile	Glu	Ser	Ala	Arg	Gln	Ala	Gly	Asp	Ser	145	150	155	160
Ala	Lys	Met	Arg	Arg	Tyr	Asp	Arg	Gly	Leu	Lys	Thr	Leu	Glu	Asn	Leu	165	170	175	
Leu	Ala	Ser	Ile	Arg	Lys	Gly	Asn	Ala	Ile	Asp	Glu	Ala	Asp	Ile	Pro	180	185	190	
Pro	Pro	Val	Ala	Ile	Gly	Lys	Gly	Pro	Ala	Ser	Thr	Pro	Thr	Tyr	Ser	195	200	205	
Pro	Ala	Pro	Thr	Gln	Pro	Ala	Pro	Arg	Ile	Ala	Ser	Ala	Pro	Glu	Pro	210	215	220	
Arg	Val	Thr	Leu	Glu	Gly	Pro	Ser	Ala	Thr	Ala	Pro	Ala	Ser	Ser	Pro	225	230	235	240
Gly	Leu	Ala	Lys	Pro	Gln	Met	Pro	Pro	Gly	Pro	Cys	Ser	Pro	Gly	Pro	245	250	255	
Leu	Ala	Gln	Leu	Gln	Ser	Arg	Gln	Arg	Asp	Tyr	Lys	Leu	Ala	Ala	Leu	260	265	270	
His	Ala	Lys	Gln	Gln	Gly	Asp	Thr	Thr	Ala	Ala	Ala	Arg	His	Phe	Arg	275	280	285	
Val	Ala	Lys	Ser	Phe	Asp	Ala	Val	Leu	Glu	Ala	Leu	Ser	Arg	Gly	Glu	290	295	300	
Pro	Val	Asp	Leu	Ser	Cys	Leu	Pro	Pro	Pro	Pro	Asp	Gln	Leu	Pro	Pro	305	310	315	320
Asp	Pro	Pro	Ser	Pro	Pro	Ser	Gln	Pro	Pro	Thr	Pro	Ala	Thr	Ala	Pro	325	330	335	
Ser	Thr	Thr	Glu	Val	Pro	Pro	Pro	Pro	Arg	Thr	Leu	Leu	Glu	Ala	Leu	340	345	350	
Glu	Gln	Arg	Met	Glu	Arg	Tyr	Gln	Val	Ala	Ala	Ala	Gln	Ala	Lys	Ser	355	360	365	
Lys	Gly	Asp	Gln	Arg	Lys	Ala	Arg	Met	His	Glu	Arg	Ile	Val	Lys	Gln	370	375	380	
Tyr	Gln	Asp	Ala	Ile	Arg	Ala	His	Lys	Ala	Gly	Arg	Ala	Val	Asp	Val	385	390	395	400
Ala	Glu	Leu	Pro	Val	Pro	Pro	Gly	Phe	Pro	Pro	Ile	Gln	Gly	Leu	Glu	405	410	415	
Ala	Thr	Lys	Pro	Thr	Gln	Gln	Ser	Leu	Val	Gly	Val	Leu	Glu	Thr	Ala	420	425	430	
Met	Lys	Leu	Ala	Asn	Gln	Asp	Glu	Gly	Pro	Glu	Asp	Glu	Glu	Asp	Glu	435	440	445	

Val Pro Lys Lys Gln Asn Ser Pro Val Ala Pro Thr Ala Gln Pro Lys
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 Ala Pro Pro Ser Arg Thr Pro Gln Ser Gly Ser Ala Pro Thr Ala Lys
 465 470 475 480
 Ala Pro Pro Lys Ala Thr Ser Thr Arg Ala Gln Gln Gln Leu Ala Phe
 485 490 495
 Leu Glu Gly Arg Lys Lys Gln Leu Leu Gln Ala Ala Leu Arg Ala Lys
 500 505 510
 Gln Lys Asn Asp Val Glu Gly Ala Lys Met His Leu Arg Gln Ala Lys
 515 520 525
 Gly Leu Glu Pro Met Leu Glu Ala Ser Arg Asn Gly Leu Pro Val Asp
 530 535 540
 Ile Thr Lys Val Pro Pro Ala Pro Val Asn Lys Asp Asp Phe Ala Leu
 545 550 555 560
 Val Gln Arg Pro Gly Pro Gly Leu Ser Gln Glu Ala Ala Arg Arg Tyr
 565 570 575
 Gly Glu Leu Thr Lys Leu Ile Arg Gln Gln His Glu Met Cys Leu Asn
 580 585 590
 His Ser Asn Gln Phe Thr Gln Leu Gly Asn Ile Thr Glu Thr Thr Lys
 595 600 605
 Phe Glu Lys Leu Ala Glu Asp Cys Lys Arg Ser Met Asp Ile Leu Lys
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 Gln Ala Phe Val Arg Gly Leu Pro Thr Pro Thr Ala Arg Phe Glu Gln
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 Arg Thr Phe Ser Val Ile Lys Ile Phe Pro Asp Leu Ser Ser Asn Asp
 645 650 655
 Met Leu Leu Phe Ile Val Lys Gly Ile Asn Leu Pro Thr Pro Pro Gly
 660 665 670
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 675 680 685
 Pro Asn Val Glu Glu Ala Gln Lys Asp Lys Thr Ser Val Ile Lys Asn
 690 695 700
 Thr Asp Ser Pro Glu Phe Lys Glu Gln Phe Lys Leu Cys Ile Asn Arg
 705 710 715 720
 Ser His Arg Gly Phe Arg Arg Ala Ile Gln Thr Lys Gly Ile Lys Phe
 725 730 735
 Glu Val Val His Lys Gly Gly Leu Phe Lys Thr Asp Arg Val Leu Gly
 740 745 750

Thr Ala Gln Leu Lys Leu Asp Ala Leu Glu Ile Ala Cys Glu Val Arg
755 760 765

Glu Ile Leu Glu Val Leu Asp Gly Arg Arg Pro Thr Gly Gly Arg Leu
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Glu Val Met Val Arg Ile Arg Glu Pro Leu Thr Ala Gln Gln Leu Glu
785 790 795 800

Thr Thr Thr Glu Arg Trp Leu Val Ile Asp Pro Val Pro Ala Ala Val
805 810 815

Pro Thr Gln Val Ala Gly Pro Lys Gly Lys Ala Pro Pro Val Pro Ala
820 825 830

Pro Ala Arg Glu Ser Gly Asn Arg Ser Ala Arg Pro Leu His Ser Leu
835 840 845

Ser Val Leu Ala Phe Asp Gln Glu Arg Leu Glu Arg Lys Ile Leu Ala
850 855 860

Leu Arg Gln Ala Arg Arg Pro Val Pro Pro Glu Val Ala Gln Gln Tyr
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Gln Asp Ile Met Gln Arg Ser Gln Trp Gln Arg Ala Gln Leu Glu Gln
885 890 895

Gly Gly Val Gly Ile Arg Arg Glu Tyr Thr Ala Gln Leu Glu Arg Gln
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Leu Gln Phe Tyr Thr Glu Ala Ala Arg Arg Leu Gly Asn Asp Gly Ser
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Glu Leu Gln Arg Leu Arg Arg
945 950

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<222> (574)..(1683)

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tagtccttaa caaagggaag gcgataaatg taaataagct cacattttca gaatgagcgg 180

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ccgaagtgcg	agttgccagt	ttacacgttt	attagctaac	tatctacagg	catgagcaca	360
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gcacctagca	ggctctctgg	gaaaaaaaaa	tcc atg ggt gac aga aga ttt att			594
			Met Gly Asp Arg Arg Phe Ile			
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gac ttc caa ttc caa gat tta aat tca agt ctc aga ccc agg ttg gga						642
Asp Phe Gln Phe Gln Asp Leu Asn Ser Ser Leu Arg Pro Arg Leu Gly						
	10		15		20	
aat gca act gcc aat aat act tgc att gtt gat gat tcc ttc aag tat						690
Asn Ala Thr Ala Asn Asn Thr Cys Ile Val Asp Asp Ser Phe Lys Tyr						
	25		30		35	
aat ttg aat ggt gct gtc tat agt gtt gta ttc atc ctg ggt cta ata						738
Asn Leu Asn Gly Ala Val Tyr Ser Val Val Phe Ile Leu Gly Leu Ile						
	40		45		50	55
acc aac agt gcc tcc ctg ttt gtc ttc tgc ttc cgc atg aaa atg aga						786
Thr Asn Ser Ala Ser Leu Phe Val Phe Cys Phe Arg Met Lys Met Arg						
		60			65	70
agt gag acg gct act ttc atc acc aac ctg gcc ctc tct gat ttg ctt						834
Ser Glu Thr Ala Thr Phe Ile Thr Asn Leu Ala Leu Ser Asp Leu Leu						
		75			80	85
ttt gtt tgt acc cta cct ttc aaa ata ttt tac aac ttt aat cgc cac						882
Phe Val Cys Thr Leu Pro Phe Lys Ile Phe Tyr Asn Phe Asn Arg His						
		90			95	100
tgg cct ttt ggt gac acc ctc tgt aag atc tca ggg act gcg ttc ctc						930
Trp Pro Phe Gly Asp Thr Leu Cys Lys Ile Ser Gly Thr Ala Phe Leu						
	105				110	115
acc aac atc tat ggg agc atg ctc ttc ctc acc tgc atc agt gtg gat						978
Thr Asn Ile Tyr Gly Ser Met Leu Phe Leu Thr Cys Ile Ser Val Asp						
	120				125	130
cgt ttc cta gcc att gtc tat ccc ttc cga tcg cgt acc atc agg acc						1026
Arg Phe Leu Ala Ile Val Tyr Pro Phe Arg Ser Arg Thr Ile Arg Thr						
		140			145	150
agg agg aat tcc gcc att gtg tgc gct gga gtc tgg atc cta gtc ctc						1074
Arg Arg Asn Ser Ala Ile Val Cys Ala Gly Val Trp Ile Leu Val Leu						
		155			160	165
agt ggt ggt att tca gct tct ttg ttc tcc acc act aat gtc aac aat						1122

Ser	Gly	Gly	Ile	Ser	Ala	Ser	Leu	Phe	Ser	Thr	Thr	Asn	Val	Asn	Asn		
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gcg	acc	acc	act	tgc	ttt	gaa	ggc	ttc	tcc	aaa	cgt	gtc	tgg	aag	aca	1170	
Ala	Thr	Thr	Thr	Cys	Phe	Glu	Gly	Phe	Ser	Lys	Arg	Val	Trp	Lys	Thr		
	185					190					195						
tac	ctg	tcc	aag	atc	act	ata	ttc	att	gaa	gtt	gtt	gga	ttc	atc	att	1218	
Tyr	Leu	Ser	Lys	Ile	Thr	Ile	Phe	Ile	Glu	Val	Val	Gly	Phe	Ile	Ile		
200					205					210					215		
cct	ctg	ata	ttg	aat	gtt	tct	tgt	tct	tct	gtg	gtg	ctt	aga	acc	ctc	1266	
Pro	Leu	Ile	Leu	Asn	Val	Ser	Cys	Ser	Ser	Val	Val	Leu	Arg	Thr	Leu		
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cgc	aag	cct	gca	aca	ttg	tct	cag	att	ggg	acc	aat	aag	aaa	aaa	gtg	1314	
Arg	Lys	Pro	Ala	Thr	Leu	Ser	Gln	Ile	Gly	Thr	Asn	Lys	Lys	Lys	Val		
			235					240					245				
ttg	aag	atg	atc	aca	gtg	cat	atg	gca	gtg	ttt	gtg	gta	tgc	ttt	gta	1362	
Leu	Lys	Met	Ile	Thr	Val	His	Met	Ala	Val	Phe	Val	Val	Cys	Phe	Val		
		250					255					260					
cca	tac	aac	tcc	gtt	ctc	ttt	tta	tat	gcc	ttg	gta	cgc	tcc	caa	gcc	1410	
Pro	Tyr	Asn	Ser	Val	Leu	Phe	Leu	Tyr	Ala	Leu	Val	Arg	Ser	Gln	Ala		
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att	act	aat	tgc	tta	ttg	gaa	agg	ttt	gca	aag	atc	atg	tac	cca	att	1458	
Ile	Thr	Asn	Cys	Leu	Leu	Glu	Arg	Phe	Ala	Lys	Ile	Met	Tyr	Pro	Ile		
280					285					290					295		
acc	ttg	tgc	ctt	gca	act	ctg	aat	tgt	tgc	ttt	gat	cct	ttt	atc	tat	1506	
Thr	Leu	Cys	Leu	Ala	Thr	Leu	Asn	Cys	Cys	Phe	Asp	Pro	Phe	Ile	Tyr		
				300					305					310			
tac	ttc	act	ctt	gaa	tcc	ttt	cag	aag	tcc	ttt	tat	atc	aat	aca	cat	1554	
Tyr	Phe	Thr	Leu	Glu	Ser	Phe	Gln	Lys	Ser	Phe	Tyr	Ile	Asn	Thr	His		
			315					320					325				
ata	agg	atg	gag	tcg	ctg	ttt	aag	act	gag	aca	cct	ctg	acc	ccc	aaa	1602	
Ile	Arg	Met	Glu	Ser	Leu	Phe	Lys	Thr	Glu	Thr	Pro	Leu	Thr	Pro	Lys		
		330					335					340					
cct	tcc	ctt	cca	gct	atc	caa	gag	gaa	gtt	agt	gat	caa	aca	aca	aat	1650	
Pro	Ser	Leu	Pro	Ala	Ile	Gln	Glu	Glu	Val	Ser	Asp	Gln	Thr	Thr	Asn		
		345				350					355						
aat	ggt	ggt	gaa	tta	atg	ctg	gaa	tcc	acc	ttc	taggtaccag	aattgtcttt	1703				
Asn	Gly	Gly	Glu	Leu	Met	Leu	Glu	Ser	Thr	Phe							
360					365					370							
cagggttcagc	tacagtggtct	cttatgattt	ttttcctatg	ctataaatag	gagaaacaaa	1763											
ttgaagctaa	tgatactgag	aatagagtaa	tgtaccaa	at	gcagtcagat	acatttgttt	1823										
gaacactatt	gtacatat	tggtttgttc	agtaattata	gggtcaagtct	aattacaaca	1883											

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 tttggtaatt gggttgggcc tataaatata gaacaaattc agggattatt taaaaacatc 2063
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 <212> PRT
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 Val Asp Asp Ser Phe Lys Tyr Asn Leu Asn Gly Ala Val Tyr Ser Val
 35 40 45
 Val Phe Ile Leu Gly Leu Ile Thr Asn Ser Ala Ser Leu Phe Val Phe
 50 55 60
 Cys Phe Arg Met Lys Met Arg Ser Glu Thr Ala Thr Phe Ile Thr Asn
 65 70 75 80
 Leu Ala Leu Ser Asp Leu Leu Phe Val Cys Thr Leu Pro Phe Lys Ile
 85 90 95

Phe Tyr Asn Phe Asn Arg His Trp Pro Phe Gly Asp Thr Leu Cys Lys
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 Ile Ser Gly Thr Ala Phe Leu Thr Asn Ile Tyr Gly Ser Met Leu Phe
 115 120 125
 Leu Thr Cys Ile Ser Val Asp Arg Phe Leu Ala Ile Val Tyr Pro Phe
 130 135 140
 Arg Ser Arg Thr Ile Arg Thr Arg Arg Asn Ser Ala Ile Val Cys Ala
 145 150 155 160
 Gly Val Trp Ile Leu Val Leu Ser Gly Gly Ile Ser Ala Ser Leu Phe
 165 170 175
 Ser Thr Thr Asn Val Asn Asn Ala Thr Thr Thr Cys Phe Glu Gly Phe
 180 185 190
 Ser Lys Arg Val Trp Lys Thr Tyr Leu Ser Lys Ile Thr Ile Phe Ile
 195 200 205
 Glu Val Val Gly Phe Ile Ile Pro Leu Ile Leu Asn Val Ser Cys Ser
 210 215 220
 Ser Val Val Leu Arg Thr Leu Arg Lys Pro Ala Thr Leu Ser Gln Ile
 225 230 235 240
 Gly Thr Asn Lys Lys Lys Val Leu Lys Met Ile Thr Val His Met Ala
 245 250 255
 Val Phe Val Val Cys Phe Val Pro Tyr Asn Ser Val Leu Phe Leu Tyr
 260 265 270
 Ala Leu Val Arg Ser Gln Ala Ile Thr Asn Cys Leu Leu Glu Arg Phe
 275 280 285
 Ala Lys Ile Met Tyr Pro Ile Thr Leu Cys Leu Ala Thr Leu Asn Cys
 290 295 300
 Cys Phe Asp Pro Phe Ile Tyr Tyr Phe Thr Leu Glu Ser Phe Gln Lys
 305 310 315 320
 Ser Phe Tyr Ile Asn Thr His Ile Arg Met Glu Ser Leu Phe Lys Thr
 325 330 335
 Glu Thr Pro Leu Thr Pro Lys Pro Ser Leu Pro Ala Ile Gln Glu Glu
 340 345 350
 Val Ser Asp Gln Thr Thr Asn Asn Gly Gly Glu Leu Met Leu Glu Ser
 355 360 365
 Thr Phe
 370

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<211> 2299
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<220>
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 <222> (67)..(1176)

<400> 175

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      Met Gly Asp Arg Arg Phe Ile Asp Phe Gln Phe Gln Asp Ser
        1              5              10
aat tca agc ctc aga ccc agg ttg ggc aat gct act gcc aat aat act      156
Asn Ser Ser Leu Arg Pro Arg Leu Gly Asn Ala Thr Ala Asn Asn Thr
  15              20              25              30
tgc att gtt gat gat tcc ttc aag tat aat ctc aat ggt gct gtc tac      204
Cys Ile Val Asp Asp Ser Phe Lys Tyr Asn Leu Asn Gly Ala Val Tyr
              35              40              45
agt gtt gta ttc atc ttg ggt ctg ata acc aac agt gtc tct ctg ttt      252
Ser Val Val Phe Ile Leu Gly Leu Ile Thr Asn Ser Val Ser Leu Phe
              50              55              60
gtc ttc tgt ttc cgc atg aaa atg aga agt gag act gct att ttt atc      300
Val Phe Cys Phe Arg Met Lys Met Arg Ser Glu Thr Ala Ile Phe Ile
              65              70              75
acc aat cta gct gtc tct gat ttg ctt ttt gtc tgt aca cta cct ttt      348
Thr Asn Leu Ala Val Ser Asp Leu Leu Phe Val Cys Thr Leu Pro Phe
              80              85              90
aaa ata ttt tac aac ttc aac cgc cac tgg cct ttt ggt gac acc ctc      396
Lys Ile Phe Tyr Asn Phe Asn Arg His Trp Pro Phe Gly Asp Thr Leu
  95              100              105              110
tgc aag atc tct gga act gca ttc ctt acc aac atc tat ggg agc atg      444
Cys Lys Ile Ser Gly Thr Ala Phe Leu Thr Asn Ile Tyr Gly Ser Met
              115              120              125
ctc ttt ctc acc tgt att agt gtg gat cgt ttc ctg gcc att gtc tat      492
Leu Phe Leu Thr Cys Ile Ser Val Asp Arg Phe Leu Ala Ile Val Tyr
              130              135              140
cct ttt cga tct cgt act att agg act agg agg aat tct gcc att gtg      540
Pro Phe Arg Ser Arg Thr Ile Arg Thr Arg Arg Asn Ser Ala Ile Val
              145              150              155
tgt gct ggt gtc tgg atc cta gtc ctc agt ggc ggt att tca gcc tct      588
Cys Ala Gly Val Trp Ile Leu Val Leu Ser Gly Gly Ile Ser Ala Ser
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Leu Phe Ser Thr Thr Asn Val Asn Asn Ala Thr Thr Thr Cys Phe Glu
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ttt att gaa gtt gtt ggg ttt atc att cct cta ata ttg aat gtc tct				732
Phe Ile Glu Val Val Gly Phe Ile Ile Pro Leu Ile Leu Asn Val Ser	210	215	220	
tgc tct tct gtg gtg ctg aga act ctt cgc aag cct gct act ctg tct				780
Cys Ser Ser Val Val Leu Arg Thr Leu Arg Lys Pro Ala Thr Leu Ser	225	230	235	
caa att ggg acc aat aag aaa aaa gta ctg aaa atg atc aca gta cat				828
Gln Ile Gly Thr Asn Lys Lys Lys Val Leu Lys Met Ile Thr Val His	240	245	250	
atg gca gtc ttt gtg gta tgc ttt gta ccc tac aac tct gtc ctc ttc				876
Met Ala Val Phe Val Val Cys Phe Val Pro Tyr Asn Ser Val Leu Phe	255	260	265	270
ttg tat gcc ctg gtg cgc tcc caa gct att act aat tgc ttt ttg gaa				924
Leu Tyr Ala Leu Val Arg Ser Gln Ala Ile Thr Asn Cys Phe Leu Glu	275	280	285	
aga ttt gca aag atc atg tac cca atc acc ttg tgc ctt gca act ctg				972
Arg Phe Ala Lys Ile Met Tyr Pro Ile Thr Leu Cys Leu Ala Thr Leu	290	295	300	
aac tgt tgt ttt gac cct ttc atc tat tac ttc acc ctt gaa tcc ttt				1020
Asn Cys Cys Phe Asp Pro Phe Ile Tyr Tyr Phe Thr Leu Glu Ser Phe	305	310	315	
cag aag tcc ttc tac atc aat gcc cac atc aga atg gag tcc ctg ttt				1068
Gln Lys Ser Phe Tyr Ile Asn Ala His Ile Arg Met Glu Ser Leu Phe	320	325	330	
aag act gaa aca cct ttg acc aca aag cct tcc ctt cca gct att caa				1116
Lys Thr Glu Thr Pro Leu Thr Thr Lys Pro Ser Leu Pro Ala Ile Gln	335	340	345	350
gag gaa gtg agt gat caa aca aca aat aat ggt ggt gaa tta atg cta				1164
Glu Glu Val Ser Asp Gln Thr Thr Asn Asn Gly Gly Glu Leu Met Leu	355	360	365	
gaa tcc acc ttt taggtatgag aaatgtgttc aggtccagat atggtttctc				1216
Glu Ser Thr Phe	370			
ctataatttt tcctatgcta taaactaaag atttgaagct aatgatactg agaataatgc				1276
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 tgagcaacac caacatatTT tttcttaaaa tgtcacgtta tcttcatttt gggaaactag 1996
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 ctgcatttgt gcccaggtca ggagcaaatt gaaaaaaaa ataaagtaat actaaaaaat 2116
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 agagatatat aacctgaaaa tacttattct ttcttatcga attttggagc ctaatatagc 2236
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 cct 2299

<210> 176
 <211> 370
 <212> PRT
 <213> Homo sapiens

<400> 176
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 Val Asp Asp Ser Phe Lys Tyr Asn Leu Asn Gly Ala Val Tyr Ser Val
 35 40 45
 Val Phe Ile Leu Gly Leu Ile Thr Asn Ser Val Ser Leu Phe Val Phe
 50 55 60
 Cys Phe Arg Met Lys Met Arg Ser Glu Thr Ala Ile Phe Ile Thr Asn
 65 70 75 80
 Leu Ala Val Ser Asp Leu Leu Phe Val Cys Thr Leu Pro Phe Lys Ile
 85 90 95
 Phe Tyr Asn Phe Asn Arg His Trp Pro Phe Gly Asp Thr Leu Cys Lys

100	105	110
Ile Ser Gly Thr Ala Phe Leu Thr Asn Ile Tyr Gly Ser Met Leu Phe 115 120 125		
Leu Thr Cys Ile Ser Val Asp Arg Phe Leu Ala Ile Val Tyr Pro Phe 130 135 140		
Arg Ser Arg Thr Ile Arg Thr Arg Arg Asn Ser Ala Ile Val Cys Ala 145 150 155 160		
Gly Val Trp Ile Leu Val Leu Ser Gly Gly Ile Ser Ala Ser Leu Phe 165 170 175		
Ser Thr Thr Asn Val Asn Asn Ala Thr Thr Thr Cys Phe Glu Gly Phe 180 185 190		
Ser Lys Arg Val Trp Lys Thr Tyr Leu Ser Lys Ile Thr Ile Phe Ile 195 200 205		
Glu Val Val Gly Phe Ile Ile Pro Leu Ile Leu Asn Val Ser Cys Ser 210 215 220		
Ser Val Val Leu Arg Thr Leu Arg Lys Pro Ala Thr Leu Ser Gln Ile 225 230 235 240		
Gly Thr Asn Lys Lys Lys Val Leu Lys Met Ile Thr Val His Met Ala 245 250 255		
Val Phe Val Val Cys Phe Val Pro Tyr Asn Ser Val Leu Phe Leu Tyr 260 265 270		
Ala Leu Val Arg Ser Gln Ala Ile Thr Asn Cys Phe Leu Glu Arg Phe 275 280 285		
Ala Lys Ile Met Tyr Pro Ile Thr Leu Cys Leu Ala Thr Leu Asn Cys 290 295 300		
Cys Phe Asp Pro Phe Ile Tyr Tyr Phe Thr Leu Glu Ser Phe Gln Lys 305 310 315 320		
Ser Phe Tyr Ile Asn Ala His Ile Arg Met Glu Ser Leu Phe Lys Thr 325 330 335		
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<212> DNA

<213> Homo sapiens

<220>

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<400> 177

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ttg ctg cgg ctc ctc gtg ctg ggg ctc tgg ctg gcg ttg ctg cgc tcc 101
Leu Leu Arg Leu Leu Val Leu Gly Leu Trp Leu Ala Leu Leu Arg Ser
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gtg gcc ggg gag caa gcg cca ggc acc gcc ccc tgc tcc cgc ggc agc 149
Val Ala Gly Glu Gln Ala Pro Gly Thr Ala Pro Cys Ser Arg Gly Ser
   25                               30                               35                               40

tcc tgg agc gcg gac ctg gac aag tgc atg gac tgc gcg tct tgc agg 197
Ser Trp Ser Ala Asp Leu Asp Lys Cys Met Asp Cys Ala Ser Cys Arg
                               45                               50                               55

gcg cga ccg cac agc gac ttc tgc ctg ggc tgc gct gca gca cct cct 245
Ala Arg Pro His Ser Asp Phe Cys Leu Gly Cys Ala Ala Ala Pro Pro
                               60                               65                               70

gcc ccc ttc cgg ctg ctt tgg ccc atc ctt ggg ggc gct ctg agc ctg 293
Ala Pro Phe Arg Leu Leu Trp Pro Ile Leu Gly Gly Ala Leu Ser Leu
                               75                               80                               85

acc ttc gtg ctg ggg ctg ctt tct ggc ttt ttg gtc tgg aga cga tgc 341
Thr Phe Val Leu Gly Leu Leu Ser Gly Phe Leu Val Trp Arg Arg Cys
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cgc agg aga gag aag ttc acc acc ccc ata gag gag acc ggc gga gag 389
Arg Arg Arg Glu Lys Phe Thr Thr Pro Ile Glu Glu Thr Gly Gly Glu
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ggc tgc cca gct gtg gcg ctg atc cag tgacaatgtg cccctgccca 436
Gly Cys Pro Ala Val Ala Leu Ile Gln
                               125

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gaggcctggg tccagggttc aggggaacct tccaaggtgt ctggttgccc tgcctctggc 616

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cacgggggtc accctggggg gttagggacc tatttttaac actagggggc tggcccacta 856

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<210> 178

<211> 129

<212> PRT

<213> Homo sapiens

<400> 178

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Leu Trp Leu Ala Leu Leu Arg Ser Val Ala Gly Glu Gln Ala Pro Gly
20 25 30

Thr Ala Pro Cys Ser Arg Gly Ser Ser Trp Ser Ala Asp Leu Asp Lys
35 40 45

Cys Met Asp Cys Ala Ser Cys Arg Ala Arg Pro His Ser Asp Phe Cys
50 55 60

Leu Gly Cys Ala Ala Ala Pro Pro Ala Pro Phe Arg Leu Leu Trp Pro
65 70 75 80

Ile Leu Gly Gly Ala Leu Ser Leu Thr Phe Val Leu Gly Leu Leu Ser
85 90 95

Gly Phe Leu Val Trp Arg Arg Cys Arg Arg Arg Glu Lys Phe Thr Thr
100 105 110

Pro Ile Glu Glu Thr Gly Gly Glu Gly Cys Pro Ala Val Ala Leu Ile
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Gln

<210> 179

<211> 3

<212> DNA

<213> Homo Sapiens

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<210> 180

<211> 3

<212> PRT

<213> Homo Sapiens

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<210> 181
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 <212> DNA
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<220>
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 activating NF-K B

<400> 181
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<210> 182
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> 3' Primer used in the screening of cDNA encoding the protein capable of
 activating NF-K B

<400> 182
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